Commute Profile '98

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Commute Profile 1998

Introduction

This section describes Commute Profile's history and methodology.

In March, 1998 RIDES for Bay Area Commuters, which operates the Bay Area's Transportation Demand Management program under contract to the Metropolitan Transportation Commission (MTC), conducted its sixth *Commute Profile* survey. *Commute Profile* is a region-wide telephone survey of commuters. The study is designed as a market research tool that can be used by RIDES and others to better understand the behavior and motivation of Bay Area commuters. *Commute Profile* is unique among Bay Area surveys in that it focuses on commute behavior and is designed to provide an on-going source of data.

The idea for an annual commuter survey arose in 1991. The region lacked information on commute trends that was updated regularly. This type of market research was needed to orient and improve TDM programs and services. The US Census measures "journey to work" and although extremely accurate, because of its large sample size, it is limited. First, it is only conducted every ten years. Second, the number of transportation related questions is small. Employer surveys have helped to fill some of the data needs, but the results are skewed. For the most part, only large employers surveyed their employees, and the surveys were not always standardized.

To track commute trends, *Commute Profile* has retained a group of core questions. The core questions include:

- Commute Mode
- Commute Distance
- Commute Time
- Demographic Information
- Availability of Free Parking
- Factors in Commute Mode Choice
- Awareness of Options to Driving Alone
- Awareness of RIDES

Additional questions on matters such as public policy, employer assistance, availability of home computers, etc. are rotated into the survey each year. They are changed based on current interest of RIDES, MTC and other who participate in the planning of *Commute Profile*. They are added or deleted based on budget constraints. These rotating blocks of questions add an important element of flexibility to the study. This year's survey has a series of questions on awareness and use of HOV facilities.

Methodology:
The target population for *Commute Profile* is adults over the age of 18 who are employed full-time (35 hours or more) outside the home. This group has been the primary customer for RIDES' services and approximates the journey-to-work subgroup from the Census. The Census, however, includes part-time workers, students and people who work at home—making the data sets not fully compatible.

The first edition of the *Commute Profile* series in 1992 selected a statistically valid sample from four quadrants, the North, South, East and West Bay. Only the South Bay (Santa Clara County) was composed of a single county. *Commute Profile* editions in

1993, 1994 and 1996 surveyed each Bay Area County individually, except for Napa and Sonoma counties that were combined. The 1995 edition of *Commute Profile*, because of a limited budget, surveyed Solano and Santa Clara counties separately, and the region as a whole. Because of budget and staffing constraints a 1997 edition of *Commute Profile* was not produced. The 1998 version, again because of a limited budget, surveyed the region as a whole and Solano and Santa Clara counties separately. Sample sizes and direct labor costs are shown in table 1.

Table 1
Commute Profile Historical Summary

Year	*Completed Questionnaires*	*Counties With Full Sample*	*Direct Costs Budget*[1]
1992	1,600	1	$22,245
1993	2,800	6	$40,325
1994	3,200	7	$44,600
1995	1,090	2	$11,844
1996	3,450	8	$41,152
1998	1,608	2	$19,000

Between February 23 and March 9, 1998, a market research consultant administered telephone surveys to 1,608 Bay Area residents. Phone numbers were randomly generated, and calls were made in the evenings or on weekends. The interviews were divided between counties as shown in table 2.

Table 2

Distribution of Interviews by County

County	*Number of Completed Interviews*	*Weighted Sample for Regional Analysis*
Alameda	245	248
Contra Costa	156	155
Marin	47	46
Napa	20	20
San Francisco	148	146
San Mateo	136	134
Santa Clara	383	315
Solano	400	63
Sonoma	73	73
Total	1,608	1,200

[1]This is the budget for acquiring the sample, conducting the telephone interviews and delivering a clean data set. It does not include questionnaire design, analysis and report preparation—RIDES staff time for these tasks is approximately 3 months (0.25 FTE).

The population being sampled here is estimated to be 3,037,000 commuters. The regional sample of 1,200 has normal sampling error rate of 3 percent associated with it. A 3 percent sampling error means that if the survey were conducted 100 times, one would be confident that 95 times out of 100 the characteristics of the sample would reflect the characteristics of the population within plus or minus 3 percent.

How Bay Area Residents Commute

This section discusses primary commute mode, secondary commute modes, duration of mode use, carpool dynamics, commute distance and time, carpool lane use and telecommuting.

Primary Commute Mode:
Driving alone is the dominant form of travel in the Bay Area. Over 71% of respondents make the daily trek to work by themselves in their vehicle (table 3). Carpooling is the next most common commute mode—just over 14% of respondents carpool to work each day. Together, commuters who drive alone and carpool comprise 85.6% of work trips. This clear preference for driving highlights the fact that for most work trips the transportation infrastructure in the Bay Area has made the private automobile preferable to other options.

Buses and BART are the next most used commute modes at 4.8% and 4.4% respectively. Walking and bicycle commuting are well below their historical averages. In 1996, 2.8% of respondents reported walking as their primary mode and 1.6% reported bicycling. The extremely wet weather of early 1998 most likely played a significant role in the reported decline in walking and bicycling.

Both Santa Clara and Solano counties have a drive alone rate somewhat higher than the region as a whole. They both also have carpool rates higher than the regional average. Transit use in those counties is well below the regional average.

Table 3

Primary Commute Mode

Mode	*Region*	*Santa Clara*	*Solano*
Drive alone	71.4%	77.3%	76.5%
Carpool	14.2%	18.3%	16.3%
Bus	4.8%	1.3%	1.5%
BART	4.4%	0.3%	1.8%
Walk	1.6%	0.5%	0.5%
Caltrain	0.8%	1.8%	0%
Bicycle	0.8%	0%	0%
Light rail	0.7%	0.5%	0%
Telecommute	0.2%	0%	0%
Vanpool	0.2%	0%	2%
Ferry	0.2%	0%	0.5%
Other [2]	0.8%	0%	1%
n=	*1,200*	*383*	*400*

Table 4 combines commute modes into four categories. Driving alone, which includes motorcyclists, remains unchanged. The carpool category also includes vanpools. The transit category combines bus, BART, Caltrain, light rail and ferry into a single category

[2] *Other* refers to being dropped off, taking a taxicab to work, or even, in some instances, flying an airplane to work.

and the "other" category includes bicycling, walking, telecommuting and some miscellaneous responses. These clustered categories are used throughout this report when mode is compared to other variables.

Table 4
Commute Mode Clusters

Mode	*Region*	*Santa Clara*	*Solano*
Drive Alone	71.4%	77.3%	76.5%
Carpool	14.3%	18.3%	18.3%
Transit	10.9%	3.9%	3.8%
Other	3.3%	0.5%	1.5%
n=	*1,200*	*383*	*400*

The drive alone rate has increased significantly since 1996. The market shares for both carpooling and transit have declined. The decline in carpooling is partially related to a methodological change. In *Commute Profile 98*, respondents who indicated that they had family or other household members in the car with them occasionally were classified into two categories. Those who had other occupants most of the time and those that were truly occasional. Only those who had passengers most of the time were classified as carpools. In past surveys, the definition was a bit more ambiguous which resulted in some additional respondents being classified as carpoolers. If the old methodology had been followed, the carpool rate would have remained unchanged at exactly 16.7%. The drive alone rate would have been 69%—still almost 5% higher than 1996 when the drive alone rate was 64.3%.

The significant drop in the "other" category (from 6.0% to 3.3%) is primarily the result of the drop in walking and bicycle commuting. As mentioned earlier, the wet weather that preceded the survey undoubtedly shifted a number of commuters to more enclosed modes. It is possible that some of the decline in transit ridership may also have been influenced by a reluctance to wait in the rain for a bus.

Table 5
Clustered Modes Over Time [3]

Mode	*1993*	*1994*	*1995*	*1996*	*1998*
Drive Alone	65.0%	66.0%	62.0%	64.3%	71.4%
Carpool	16.7%	16.6%	19.3%	16.7%	14.3%
Transit	11.9%	12.1%	11.8%	13.0%	10.9%
Other	6.5%	5.2%	7.0%	6.0%	3.3%

In addition to the wet weather, *Commute Profile* results provide some evidence that may explain much of the popularity of driving alone.

The most obvious explanation is that alternatives to driving alone are less viable for 1998 commute patterns than they were for 1996 patterns. Convenience, flexibility and the perceived lack of other options are key reasons commuters choose to drive alone

[3] Although a *Commute Profile* survey was conducted in 1992, the methodology used to determine travel mode was changed in 1993 to be more consistent with the methodology being used in the BAAQMD's regulation 13 surveys and in the US Census. Since the data from 1992 are not fully compatible, it would be misleading to include them here.

(tables 12 and 13). The Bay Area's transportation infrastructure strongly supports drive alone commuting. While this is not news to anyone, *Commute Profile* data shows that when the paradigm is changed, as in the case where parking is not free and other attractive options exist, driving alone loses much of its appeal (see Parking and Employer Incentives section).

A second explanation involves the expanding Bay Area economy. The infrastructure (e.g., plentiful parking, limited transit service, equal access for SOV and HOV vehicles) associated with most new suburban development[4] encourages drive alone commuting. The strong economy that the Bay Area has experienced the last several years not only encourages drive alone travel through the development of car oriented infrastructure, but also through the development of behavior that is less price sensitive.

Cost is a significant factor in the decision to carpool or use transit (table 12); the strong economy may reduce individual concerns about cost. The low price of gasoline (gas prices are at an inflation-adjusted all-time low [5]; the average price in Northern California dropped from $1.37 to $1.21 between March 1997 and March 1998 [6]) further exacerbates the situation by making driving relatively less expensive.

Finally, employer trip-reduction programs are decreasing (table 15). While many employers continue their efforts on a voluntary basis, region-wide these efforts have been reduced from the BAAQMD mandated levels of a couple years ago when the last *Commute Profile* was produced. It is difficult to estimate the extent of the impact on regional travel, but from the perspective of commute alternative advocates it is not positive.

Secondary Mode:
Most respondents (94.5%) use the same mode each day they commute. A relatively small number (5.5%) of respondents use a secondary mode on a regular basis (i.e., one or more days a week). Table 6 shows that driving alone is the most popular secondary mode followed by carpooling and telecommuting.

Table 6
Secondary Commute Modes

Mode		*Mode*	
Drive Alone	40.6%	Caltrain	2.9%
Carpool	11.6%	Walk or Jog	2.9%
Telecommute	10.1%	Light Rail	1.4%
Bicycle	8.7%	Motorcycle	1.4%
Bus	7.2%	Other	7.2%
BART	4.3%	*n=66*	

Duration of Mode Use:

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[4] According to *ABAG Projections 98* only 14% (61,380 of 431,750) of projected Bay Area job growth between 1995 and 2000 is in the San Francisco-Oakland-Berkeley urban area.

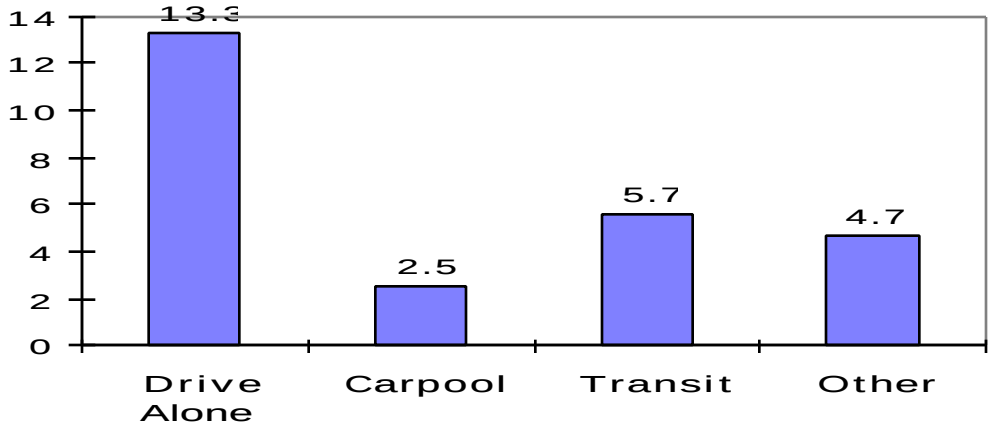
[5] The Urban Transportation Monitor, Vol. 12, No 8. April 1998.

[6] Average for a gallon of regular unleaded, self-serve gasoline according to CSAA monthly survey of 600 gas retailers.

The 1998 *Commute Profile* survey was the first in this series to ask all respondents how long they have been using their current mode. Commuters who drive alone exhibit the greatest "brand loyalty" to their mode of travel; they have been driving alone to work for an average of 13.3 years (Figure 1). Transit users had the second longest duration at 5.7 years. Other mode users were next at 4.7 years and carpoolers had the shortest duration at 2.5 years.

Figure 1

Duration of Current Modes



Carpool Dynamics:
Although data on duration of mode use was collected for the first time in 1998 from users of all modes, *Commute Profile* has been collecting data on carpool duration since 1993. In 1993 and 1994, the average length of time respondents had been carpooling was about three and a half years (table 7). In 1995, the average was down to two and a half; by 1996, the average had dropped to only a year and a half. The 1998 survey shows the average duration back up to two and a half years.

Table 7

Carpool Duration

1993	3.5 years
1994	3.5 years
1995	2.5 years
1996	1.5 years
1998	2.5 years

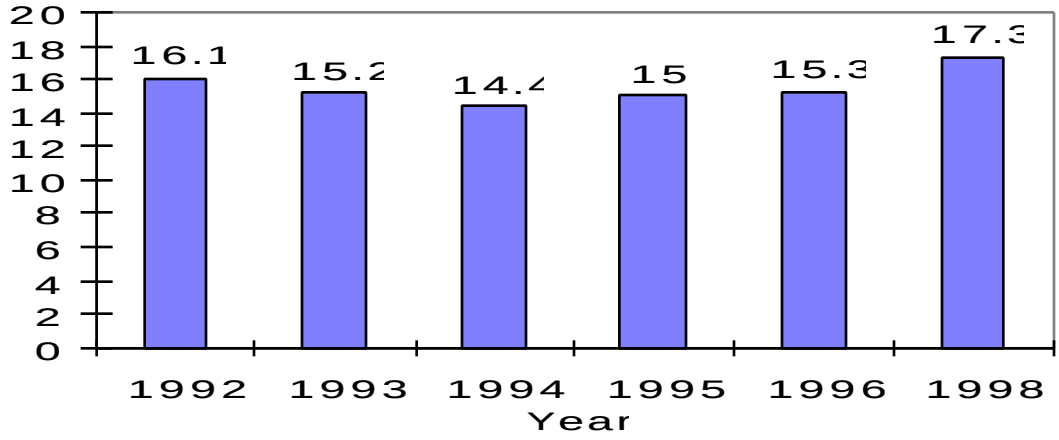
Most Bay Area carpools (67.9%) have two occupants; the average carpool size (including the driver) is 2.46 occupants. This is down from the 1996 survey where the average occupancy was 2.75.

Most respondents (37.1%) indicated that they carpooled with co-workers. Household members were a close second¾34.8% of carpools include members of the same household. The next most common arrangement (14.6%) was with friends or neighbors while 4.5% of carpools included relatives who did not live in the same household.

Commute Distance and Time:
The average one way commute distance increased from 15.3 miles in 1996 to 17.3 miles in 1998 (figure 2). Solano County commuters traveled the longest commute distances in 1996 (23.1 miles each way). The 1998 survey shows the distance Solano County commuters travel increasing to 27.3 miles. Santa Clara County commuters traveled 13.8 miles to work in 1996. That has increased slightly to 14.1 miles in 1998.

Figure 2

Average Regional Commute Distance



The increase in the average commute distance is reflected in the decrease from the 0-5 mile range and the increase in both the 11-20 and 21-40 mile ranges (table 8). However, about a quarter of Bay Area commuters still travel less that five miles to work. Long distance commuters (41+ miles) are still the smallest segment of the commute market.

Table 8
Commute Distance Over Time

	1992	*1993*	*1994*	*1995*	*1996*	*1998*
0 - 5 miles	29.0%	35.4%	36.3%	33.8%	32.7%	25.1%
6 - 10 miles	18.3%	18.8%	18.1%	18.6%	20.0%	20.2%
11 - 20 miles	26.0%	21.9%	23.4%	24.9%	24.6%	27.5%
21 - 40 miles	20.4%	16.9%	16.8%	15.2%	16.1%	20.7%
41 miles +	6.3%	7.0%	5.4%	7.6%	6.6%	6.5%
	n=1,600	*n=2,782*	*n=3,201*	*n=400*	*n=3,188*	*n= 1,171*

The drive alone rate is lowest among short distance commuters (table 9). This group has the highest "other" rate which includes options such as biking and walking. The short distance commuters also have the highest level of transit usage. Carpooling is highest among commuters who travel 6-10 miles. Despite the differences noted above the variation between groups is not great. The mileage category with the highest percentage of commuters (11-20 miles) also has the highest drive alone rate.

Table 9

Commute Mode by Distance

	Drive Alone	*Carpool*	*Transit*	*Other*	*Total*
0-5 Miles *(17.8% of respondents)*	69.4%	6.8%	14.3%	9.5%	100%
6 - 10 Miles *(14.2% of respondents)*	71.3%	18.6%	10.1%	0%	100%
11 - 20 Miles *(20.8% of respondents)*	75.8%	15.8%	7.5%	0.9%	100%
21 - 40 Miles *(14.3% of respondents)*	70.7%	17.8%	9.1%	2.5%	100%
41 Miles or more *(5.1% of respondents)*	73.7%	15.8%	9.2%	1.3%	100%

n=1,171

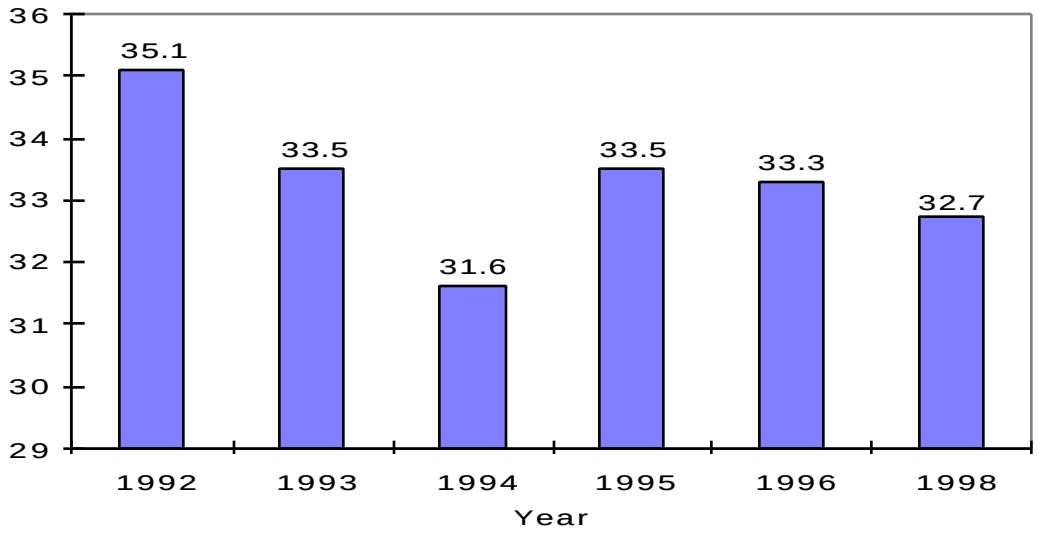
Along with increased distance comes increased travel time. The average commute time increased by approximately four minutes between 1996 and 1998 (table 10). The typical Bay Area commuter now spends just over thirty minutes on his or her way to work. Adding to travel time, the average travel speed has decreased slightly to 32.7 miles per hour. With the exception of 1994, which showed an unusually slow travel time, the other years show a small but steady decrease in speed.

Table 10
Travel Time to Work

	1992	*1993*	*1994*	*1995*	*1996*	*1998*
Average Minutes	27.5	27.2	27.3	26.9	27.5	31.7
One-way Miles	16.1	15.2	14.4	15.0	15.3	17.3
Miles Per Hour	35.1	33.5	31.6	33.5	33.3	32.7

Driving alone is the fastest mode of travel at 37.5 miles per mile; carpooling is second at 21.4 miles per hour. “Other” mode users and transit users experience the slowest travel speeds at 21.4 and 19.4 miles per hour respectively. Although these estimates show that it takes approximately twice as long to commute the same distance by transit as it does by car, a direct comparison may be misleading. Transit tends to be used more in heavily congested areas, such as within the City of San Francisco, where travel time would be relatively slow in a car, on a bicycle or on transit. Most transit users (68%) identified in this survey work in San Francisco.

Figure 3
Commute Time and Speed



In 1996, Solano County commuters average commute time was 31.6 minutes—the longest of any county. That has increased to 36.4 minutes in 1998. Santa Clara County commuters had the second shortest commute time in 1996 (Contra Costa was shorter). Commuters there traveled an average of 24.6 minutes to work. They now travel about two minutes longer or 26.5 minutes.

Carpool Lane Use:
Despite the region's network of 237 miles of carpool lanes, 55.2% of respondents indicated that there were no carpool lanes along their route to work. Forty-three percent indicated that there was a carpool lane along their route to work and two percent weren't sure. Of those who indicated that there was a carpool lane along their route to work, almost all (96.1%) were familiar with the lane's operating rules (i.e., number of occupants and hours). Thirty-eight percent indicated that they used the lane. This is up considerably from previous years. In 1996 26% used the carpool lane along their route and 1994 only 22% used it. Of those who used the lane, three quarters (73.6%) said that it saved them time—an average of over 15 minutes. This estimate has been fairly consistent since 1993 (table 11). Of those who had a carpool lane along their route but were unable to use it, most (65.3%) thought it would save them time if they were able to use it.

Table 11
Minutes Saved by Using Carpool Lane

	1993	1994	1995	1996	1998
Minutes Saved	13.7	15.5	13.6	15.6	15.5

Telecommuting:
Most respondents (83.6%) do not have the option to work at home instead of going to their regular place of work. Only 15.9% of respondents indicated that they do have the option to telecommute. This is virtually unchanged from the 1996 survey where just over 16% of respondents indicated that telecommuting was an option for them.

Approximately 80% of respondents who have the option to telecommute take advantage of it. Of those who do telecommute:

- 3.8% do so one day per month,
- 37.8% do so two to four days per month,
- 38.4% do so 5 or more days per month.

The average is 5.9 days per month. This is up a bit from the 1996 survey where the average was 4.6 days per month.

Since one goal of telecommuting is to reduce vehicle trips, respondents were asked if they made more, the same or fewer trips on days that they telecommute compared with days when they commuted to work. Although 12.0% of respondents indicated that they did not know if they made more or fewer trips, table 12 shows that, of those who were aware of their travel behavior, the majority (60.4%) of telecommuters make fewer trips. The data are fairly consistent between the 1996 and 1998 surveys; in 1996, 63.4% of telecommuters indicated that they made fewer trips.

Table 12
Trips Made on Telecommuting Days

More	5.0%
Fewer	60.4%
Same	34.6%

n= 159

Determinants of Mode Choice

This section looks at why commuters choose specific modes, changing commute conditions, parking and employer incentives and changes in home and work location.

Why Commuters Choose Specific Modes:

Commute Profile respondents were asked what their reasons were for using their current mode of transportation. Table 13 shows the reasons for all respondents and reasons based on current mode. Convenience and flexibility was the most commonly cited reason. Because of the generic nature of this response, respondents were asked to explain further what they meant by convenience and flexibility. Table 14 provides further detail on respondents' meaning of convenience and flexibility.

Table 13

Mode Choice Factors

Reason For Mode Choice	*All Modes*	*Drive Alone*	*Carpool*	*Transit*	*Other*
Convenience and flexibility	21.6%	23.2%	16.7%	23.5%	6.7%
No other way to get to work	17.8%	21.4%	10.4%	11.3%	3.3%
Travel time to work	11.8%	11.6%	14.1%	9.8%	10.0%
Work hours / work schedule	7.2%	9.2%	3.7%	1.5%	3.3%
Need vehicle during work	6.9%	8.5%	6.7%	0.0%	0.0%
Commuting Costs	6.0%	2.1%	14.9%	14.7%	11.7%
Comfort / relaxation	3.4%	1.6%	3.0%	10.8%	13.3%
Need vehicle before / after work	3.1%	3.9%	2.6%	0.0%	0.0%
Come and go as I please	2.3%	3.0%	1.1%	0.5%	0.0%
Not being dependent on others	1.7%	2.2%	1.1%	0.5%	0.0%
Stress	1.1%	0.1%	1.1%	5.4%	6.7%
Environmental concerns	1.2%	0.3%	1.9%	3.9%	6.7%
Safety	1.1%	0.3%	5.6%	0.0%	0.0%
Ability to get home in emergency	0.8%	0.9%	1.1%	0.0%	0.0%
Privacy	0.8%	0.9%	0.4%	0.5%	3.3%
Enjoy talking with someone	0.6%	0.1%	3.0%	0.5%	0.0%
Employer incentives	0.2%	0.1%	0.0%	1.0%	0.0%
"Other"	12.2%	10.4%	12.6%	15.7%	35.0%
n=	*1,200*	*857*	*172*	*131*	*40*

Many of the responses shown in table 13 were consistent across each of the modal groups, however there are several notable variations. Solo drivers felt more strongly than other commuters that they had no other options. Along with transit users they also ranked their mode high in terms of convenience and flexibility. Commuting costs are significantly more important for transit and carpool users than for drive alone commuters. Travel time is ranked higher by carpoolers than drive alone commuters. Since carpooling usually involves pick-up or drop-off trips which add time, carpool lanes must be saving commuters time. Comfort and relaxation was a more relevant reason for transit users than the users of other modes. Environmental concerns ranked highest among "other mode" users and relatively high among carpool and transit users compared with drive alone commuters; safety ranked higher among carpoolers than any of the other modes.

Convenience and flexibility translated for most respondents (and especially commuters who were driving alone) into the ability to come and go as they pleased (table 14). Not far behind and ranking relatively high for each of the mode categories is travel time. It is interesting to note that transit users mentioned reliability more often than respondents using other modes did. This was the first time that the *Commute Profile* survey asked respondents to elaborate on their meaning of convenience and flexibility; the "other" category is quite high, especially for carpool and transit users, this should be delineated further in future surveys

Table 14

Convenience and Flexibility

Explanation	*All Modes*	*Drive Alone*	*Carpool*	*Transit*
Come and go as I please	24.5%	29.8%	15.9%	4.6%
Fastest way to travel	23.2%	23.4%	27.0%	16.9%
Easy to change plans, stops, etc.	12.1%	13.6%	11.1%	4.6%
Reliable and dependable	10.3%	7.4%	9.5%	24.6%
Don't have to coordinate	9.1%	10.1%	6.3%	6.2%
Don't have to go out of my way	3.5%	2.4%	4.8%	9.2%
Get home in an emergency	1.9%	2.4%	0.0%	0.0%
Only time to myself	0.2%	0.0%	0.0%	1.5%
"Other"	14.6%	10.6%	23.8%	30.8%
n=	*366*	*270*	*45*	*48*

Changing Commute Conditions:
Respondents were asked if their current commute is better, worse or about the same as a year ago. Most respondents indicated that their commute conditions were about the same as they were a year ago. Over a third of commuters felt their commute had gotten worse; those who indicated that their commute had gotten better were in the minority.

- Better 15.6%
- Worse 37.7%
- About the same 46.7%

The reason behind worsened commute conditions was clear—traffic and more of it (table 15). Heavier traffic and construction delays account for almost three-quarters of the worsening conditions. For those who reported improvements in their commute conditions about a quarter were making a different commute. Lighter traffic, roadway improvements and changing modes were the next most commonly cited reasons for improved conditions.

Table 15

How Commute Has Gotten Better or Worse

Better		**Worse**	
Different Commute	27.5%	Traffic Heavier	58.2%
Traffic Lighter	17.6%	Construction Delays	10.7%
Roadway Improvements	16.2%	Weather Worse	5.9%
Changed Mode	8.3%	More Road Work	5.0%
Travel at Different Time	7.4%	Different Commute	3.9%
Less Road Work	0.5%	Changed Mode	1.9%
Weather Improved	0.5%	Travel at Different Time	1.7%
Other	21.1%	Other	12.1%
	n=181		*n=438*

Respondents were also asked if they had changed how they commute as a result of the January 1 bridge toll increase. Most (97.5%) had not made any changes. Of the 2.5% who did change, the largest group (36.7%) is using a different route. About 10.0% are either carpooling or using transit regularly, 13.3% are now carpooling or using transit occasionally and 6.7% are now telecommuting more frequently.

Parking and Employer Incentives

Eight out of ten respondents have free all day parking available at or near their work site. The influence of parking on mode choice is significant, although parking is only one of several variables ultimately influencing behavior. Locations, such as downtown San Francisco, where free parking is scarce are also well served by transit. Locations with free parking available have a drive alone rate of 79.5% while those without free parking available have a drive alone rate of 41.8%[7]. Results from past years have been similar showing large differences in the drive alone rate between the parking "haves" and "have nots". Transit use is even more dramatic. For those with free parking the transit use rate is 3.5%; for those without it jumps to 38.9%. The effect on carpooling is minimal. The carpooling rate is about the same—15.7% for those who have free parking versus 15.2% for those without free all day parking. In the 1996 survey, carpooling rates were actually a little higher in areas with free parking—17.6% for those who had free parking versus 13.8% for those without free all day parking.

Respondents were also asked if their employer encourages employees to use transit, carpool or bicycle to get to work. Fifty-eight percent indicated that their employer did not, 36.2% indicated that their employer did and 5.7% were not sure. The percentage of employers with programs appears to be declining from the 1996 high point (table 16). The BAAQMD mandated trip reduction regulation was rescinded in late 1995. The high point in 1996 was probably a carryover from the regulation and the more recent decline is likely related to the absence of the BAAQMD regulation.

Table 16
Employers Who Encourage Use of Commute Alternatives

	1994	1995	1996	1998
Employers With Programs	33.7%	39.3%	41.0%	36.2%

[7] Although parking is the variable identified here, the are undoubtedly other factors influencing mode choice, such as a higher levels of transit service in areas with paid parking.

Not only is the number of programs declining but their effectiveness (i.e., the ability to influence mode choice decisions) may also be declining. Respondents who work at companies where their employer encourages alternatives to driving alone are still more likely to carpool but by a lesser degree (table 17). In 1996, there was almost a 7% difference in the drive alone rate (60.6% with versus 67.7% without). In 1998, the difference is only 2.7% (69.7% with vs. 72.4 without).

Table 17
Commute Modes with and without Employer Encouragement

	Drive Alone	Carpool	Transit	Other
Encourages Alternatives	69.7%	14.6%	11.3%	4.4%
Does Not Encourage	72.4%	14.6%	10.3%	2.7%

Changes in Home and Work Location:
Experience with marketing commute options has shown that commuters are more open to changing modes when they change their home or work location than at more stable times. Respondents were asked how long ago they last changed their residence and how long ago they last changed their work location. As might be expected, work locations change more frequently than residential locations. Respondents had been at their current work location for 5.6 years and at their current home location for an average of 7. 5. Table 18 shows that for both residence and work location the most common category is 1-3 years. The only noticeable connection between current mode and length of time at residence or work is that the transit use rate is higher for people who change their home and work location more frequently. The drive alone rate is relatively consistent across all categories.

Table 18
Last Changed Home and Work Location

	Residence	Work Location
Less than 1 Year	13.6%	21.0%
1 – 3 Years	29.4%	35.2%
4 – 6 Years	17.1%	13.6%
7 – 9 Years	9.7%	9.0%
10 – 15 Years	15.3%	11.7%
More than 15 Years	14.9%	9.4%
	n=1,173	*n=1,150*

Assessing Market Demand

This section discusses past use of commute alternatives and likelihood of future commute alternative use.

Past Use of Commute Alternatives:
Drive alone commuters tend to be the most loyal to their mode of transport; the typical drive alone commuter has been using that mode for over 13 years. Transit users and carpoolers do not stick with their travel modes nearly as long; transit users average 5.7 years and carpoolers only 2.5 years.

To find out more about why alternative mode users switch modes, respondents who normally drive alone to work were asked if they had ever carpooled or rode transit to get to their current job. A surprisingly high percentage (33.4%) indicated that they had carpooled or used transit in the past. Those who had carpooled or used transit were asked why they no longer did so regularly (table 19).

Irregular hours topped the list of reasons why respondents no longer carpooled; this was followed closely by difficulty finding partners. Over half (52.3%) of the respondents who were no longer carpooling because they couldn't find partners were unaware of the regional ridematching services. Two reasons stood out at the top of the transit list—it takes too much time and is just not practical.

Table 19
Reasons For Not Carpooling or Riding Transit

Reasons For Not Carpooling		*Reasons For Not Using Transit*	
Irregular Hours	23.2%	Takes too much time	21.6%
Can't find partners	22.6%	Not practical	20.6%
Not practical	15.5%	Transit Unreliable	10.6%
Need car before / after work	6.6%	Irregular Hours	10.3%
Need car during work	6.1%	Need car during work	7.8%
Takes too much time	5.6%	Need car before / after work	4.0%
Transport children	4.3%	Transport children	3.5%
Prefer to drive alone	2.0%	Too Expensive	1.5%
Desire privacy	1.5%	Don't know	1.5%
Don't know	0.8%	Prefer to drive alone	1.0%
Safety	0.5%	Safety	1.0%
Other	11.2%	Other	15.6%

n=*316*

Likelihood of Future Commute Alternative Use:
Respondents, who were currently driving alone, were asked how possible it would be to carpool, ride transit or bicycle to work at least one or two days a week (table 20). Each column is dominated by the "not at all possible" response. However if even half of the 30% to 40% who indicated it was very to slightly possible could be enticed to use an alternative, it would be quite significant (15% to 20% fewer solo drivers one or two days a week). Carpooling is the alternative that appeals to the greatest number of people with 19.8% indicating it is very to somewhat possible. There are approximately 2,168,000 commuters driving alone, 19.8% represents over 425,000 commuters who feel carpooling is an option for them!

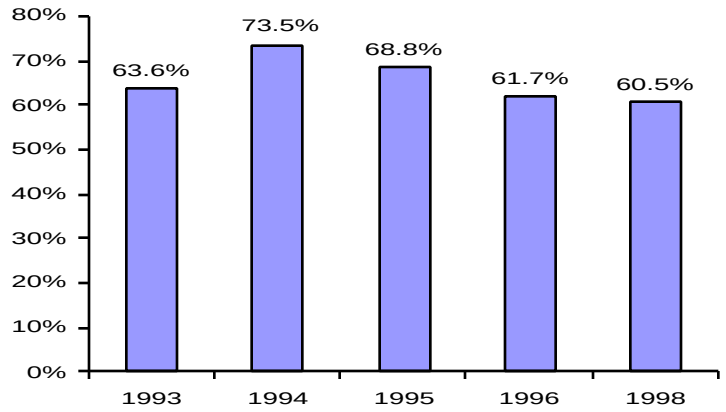
Bicycling is the next most popular alternative with 14.1% of all respondents indicating it is "very" to "somewhat" possible. If only the commuters who travel 10 miles or less are selected, the potential bicyclists group goes up to 27.4%. Over 45% of Bay Area commuters travel 10 miles or less to work so this is a substantial number of commuters (over 260,000) who feel bicycling is a realistic alternative.

Table 20
How Possible Would It Be to Use an Alternative Travel Mode

	To Carpool	*To Use Transit*	*To Bicycle*
Very Possible	9.0%	5.4%	7.6%
Somewhat Possible	10.7%	8.2%	6.5%
Slightly Possible	19.4%	13.8%	7.2%
Not At All Possible	60.5%	72.7%	78.7%
	n=930	*n=930*	*n=944*

There has been a steady decline since 1994 in the number of respondents who rule out carpooling as a feasible option for them (figure 4).

Figure 4
Not at All Possible to Carpool



One of the most positive notes from this survey was the response to the question that asked commuters, who were currently driving alone, if they would be willing to take a carpool passenger if it changed their trip by less than 5 minutes. Almost half (47.1%) of respondents indicated that they would be willing to do so.

Awareness of Commute Information Services

This section gauges commuters' awareness of RIDES, its 800 755-POOL phone number, the Travinfo service and its 817-1717 phone number.

Respondents were asked if they were aware of a free service that would provide them with a list of potential carpool partners. Awareness of the matchlist service appears to have peaked in 1994 when it was at 48.3% (table 21). It is now back to the level similar to 1992.

Table 21
Awareness of Matching Service

1992	1993	1994	1995	1996	1998
43.4%	45.9%	48.3%	46.3%	43.9%	44.9%

Awareness of carpool information numbers such as (800) 755-POOL was also included in the survey. The highest level of awareness was recorded in 1992; the 1998 level is above 1996 by two percentage points but ten percentage points below the 1992 mark (table 22). Reduced funding levels for RIDES and fewer employer-based trip-reduction programs are likely factors contributing to this decline. Of those who were aware of the 800 number, 6.6% had contacted it.

Table 22
Awareness of (800) 755-POOL

1992	1993	1994	1995	1996	1998
67.5%	63.7%	61.5%	57.3%	55.5%	57.5%

The survey included questions to see if respondents were familiar with the transit and traffic phone number 817-1717. The percentage of respondents familiar with the 817-1717 number (12.8%) was significantly lower than those familiar with the (800) 755-POOL number. This is not surprising given that the 817-1717 service is relatively new in the Bay Area. Of those who had heard of 817-1717, 30.7% had contacted it.

Respondents were asked if they had heard of an organization called RIDES for Bay Area Commuters (table 23). Awareness appears to be up a bit over the last several years. The BART strike, which happened about six months before the survey, provided a great deal of media exposure for RIDES; this most likely increased RIDES' name recognition.

Table 23
Awareness of RIDES

1992	1993	1994	1995	1996	1998
49.6%	44.0%	40.4%	40.6%	41.5%	45.3%

Most who knew of RIDES had heard about it through the media (table 24). Freeway signs and employer events were other significant sources among those who could remember where they learned of the Bay Area's regional ridesharing program.

Table 24
How Commuters Heard of RIDES

Media	43.7%
Freeway Sign	12.5%
Don't Remember	11.7%
Employer Event	9.9%
Friend or Co worker	5.4%
Saw Vanpool	2.5%
Employer Survey	2.0%
Direct Mail	2.0%
Transit Agency	1.3%
Community Event	1.1%
School	0.5%
Other	7.2%

n=528

Conclusions

This section summarizes some of the more interesting findings from the survey.

This is the sixth edition in the *Commute Profile* series. The objective of the series is to track and analyze trends. These trends include mode, distance, travel time, reasons for choosing particular modes, perceptions of commute conditions, potential to change modes and awareness of TDM services. To date, most variables have not exhibited a clear upward or downward trend. Perhaps over time the trends will become clearer.

Commute distance is one variable that has exhibited a clear trend. Commutes are getting longer; distance is increasing and speed is decreasing slightly. The average commute increased by two miles over the last two years. In 1996, commuters reported an average travel speed of 33.3 miles / hour. In 1998, average travel speed had dipped slightly to 32.7 miles / hour. Driving alone is the fastest mode of travel for most trips—followed closely by carpooling. Transit users reported the slowest travel time among the four major modal categories.

The finding of interest to most readers is the increase in the percentage of commuters driving alone. Even after accounting for the change in methodology used to classify carpoolers, the drive alone rate increased by almost 5%. In addition to the wet weather, which may have reduced the walking and bicycle rates, *Commute Profile* provides some possible explanations for this shift.

The most obvious explanation is that the alternatives to driving alone are less viable now than they were a few years ago. Convenience, flexibility and the perceived lack of other options are the key reasons commuters choose to drive alone. The Bay Area's transportation infrastructure strongly supports drive alone commuting. While this is not news to anyone, *Commute Profile* data shows that when the paradigm is changed, as in the case where parking is not free and other attractive options exist, driving alone loses much of its following.

A second explanation involves the expanding Bay Area economy. The infrastructure associated with most new suburban development encourages drive alone commuting. The strong economy that the Bay Area has experienced the last several years not only encourages drive alone travel through the development of car-oriented infrastructure, but also by lessening the importance of cost in commute mode choice. Cost is a significant factor in the decision to carpool or use transit; the strong economy may reduce individual concerns about cost. Low gas prices further reduce the cost advantage of carpools and transit relative to drive alone commuting.

Finally, employer trip-reduction programs are decreasing. While many employers continue their efforts on a voluntary basis, region-wide these efforts have been reduced from the BAAQMD mandated levels of a couple years ago. It is difficult to estimate the extent of the impact on regional travel, but the reduced level of employer involvement most likely contributed to the decline in the use of commute alternatives.

The fact that more commuters are driving alone is not simply a result of a lack of willingness on the part of drive alone commuters to try alternatives. Approximately one in three had carpooled or used transit in the past to get to work. The main reasons for not continuing to use an alternative to driving alone involved the irregularity of their work hours, difficulty finding partners (in the case of carpoolers) and taking too much time (in the case of transit users).

Commuters who drive alone are very "loyal" to their mode. On the average, respondents had been driving alone to work for over 13 years. That is remarkable considering that they had been at the same residential location for only 7.5 years and at the same work location for only 5.6 years. Carpools, on the other hand, appear to be inherently less stable; they continue for an average of 2.5 years. Keeping Bay Area carpoolers rolling is more of an on-going job of persuasion and maintenance when compared with users of other modes.

Despite the dominance of the single occupant automobile, *Commute Profile* offers some insights into how to reverse this recent trend. It does not appear to be the car itself that commuters desire but rather its attributes (e.g., travel speed, flexibility, reliability). A long-term strategy involves modifying the Bay Area transportation infrastructure in a way that makes alternatives to the automobile equally as fast, flexible and reliable. This approach, however, could fill political and logistical agendas for some time.

A more near-term strategy involves preferential treatment of HOV vehicles. It appears that carpool lanes are working. More carpoolers cite travel time as a reason for choosing that mode than do drive alone commuters. Congestion in the Bay Area will likely continue to worsen so the opportunity to implement timesaving strategies through carpool lanes or other preferential treatments should increase. Transit users rank their mode quite high in terms of convenience and flexibility. The challenge is to make this type of service available to more people. Traditional transit has limited markets where density is high enough to warrant the type of service commuters would consider convenient and flexible. The challenge is to continue to provide top-notch service to high-density areas and find innovative solutions for lower density areas.

Although the majority of respondents indicated that alternatives to driving alone were not a practical option for them, there are some reasons to be optimistic. First, the percentage of respondents who feel carpooling, transit and bicycling are not a practical option is declining (down 13 percentage points since 1994). Secondly, even if only half of the drive alone commuters who indicated that carpooling is very to somewhat possible switched that would be 425,000 fewer single occupant drivers on the road. Third, almost half of the respondents who currently drive alone indicated that they would be willing to take a carpool passenger if it changed their trip by less than five minutes. And finally, awareness of RIDES, its 800 number and its ridematching service are all up this year after several years of decline.

Solano County

This section presents results on a sub-sample of Solano County residents

Solano County's setting is unique in the Bay Area; it is located between the two largest population areas in Northern California, Sacramento and San Francisco. Of the San Francisco Bay Area counties, it is one of the farthest from the region's center. Solano County residents' commutes tend to be longer; more of them drive alone and very few ride transit.

As in past Commute Profiles, 400 commuters were surveyed in Solano County in 1998. The sample of 400 has normal sampling error rate of 5 percent associated with it. A 5 percent sampling error means that if the survey were conducted 100 times, one would be confident that 95 times out of 100 the characteristics of the sample would reflect the characteristics of the population within plus or minus 5 percent. For Solano County commuters, the survey included some county-specific questions on use of the electronic toll collection system (FasTrak) of the Carquinez Bridge and knowledge of Solanolinks in addition to the questions used for all Bay Area counties.

Primary Commute Mode:
More respondents reported driving alone than in past surveys. As shown in table Sol-1, the drive alone rate is, 76.5%¾10 percentage points higher than in 1996. As noted in the section for the whole region, the decline in the carpool rate is due in part to a methodological change from past surveys. Following the old methodology, the drive alone rate would have been 73.3% and the carpool rate 19.5%.

Table Sol-1

Primary Commute Mode

Mode	*1993*	*1994*	*1995*	*1996*	*1998*
Driving alone	67.8%	72.0%	72.0%	66.3%	76.5%
Carpool	20.1%	20.0%	19.3%	20.8%	16.3%
Vanpool	5.3%	2.3%	2.3%	2.3%	2.0%
Walk	0.8%	1.3%	1.3%	2.3%	0.5%
BART	1.0%	1.3%	1.3%	3.0%	1.8%
Telecommute	0.5%	0.5%	0.8%	1.0%	0.0%
Motorcycle	1.0%	0.3%	0.8%	0.3%	0.0%
Bus	2.3%	1.3%	0.8%	1.5%	1.5%
Ferry	0.3%	0.3%	0.5%	0.0%	0.5%
Bicycle	0.5%	0.8%	0.3%	2.3%	0.0%
Other	0.8%	0.3%	1.0%	0.5%	1.0%

Table Sol-2 combines the commute modes for Solano County commuters. The drive alone category remains the same. The carpool category includes vanpoolers. The transit category includes all commuters who ride the bus, BART, Caltrain, light rail and ferry. The "other" category includes everything else: bicycling, walking, working at home, and

miscellaneous commute modes. Later tables will use the clustered categories to compare mode with other variables.

Table Sol-2

Clustered Modes Over Time

Mode	*1990*	*1993*	*1994*	*1995*	*1996*	*1998*
Drive Alone	73.9%	68.1%	72.3%	72.8%	66.5%	76.5%
Carpool	19.0%	25.4%	22.3%	21.5%	23.0%	18.3%
Transit	2.3%	3.9%	2.9%	2.5%	4.5%	3.8%
Other	4.8%	2.6%	2.9%	3.3%	6.0%	1.5%

Duration of Mode Use:
As shown in Table Sol-3, the length of time Solano County residents have been driving alone, 13.4 years, is similar to the regional average. However, they carpool for an average of 5.5 years, twice as long as the regional average. Carpooling and vanpooling substitute for transit for many Solano County commuters; the relatively long carpool duration is most likely related to the limited transit and the longer-than-average commute distances (discussed below).

Table Sol-3

Duration of Current Modes

Mode	*Years*	
All modes	11.9	*n=397*
Drive alone	13.4	*n=304*
Carpool	5.5	*n=72*
Transit	3.3	*n=15*
Other	5.7	*n=6*

Carpool Dynamics:
As noted above, the average Solano County carpooler has been using that mode for 5.5 years, three times the duration of the region's carpoolers. Solano carpools have more people in them. Only 54.5% have 2 people in them compared with the regional average of 67.9%; the average carpool has 2.67 occupants compared with 2.55 for the whole Bay Area.

Telecommuting:
Only 9.8% of respondents said they have the option to telecommute, somewhat less than the regional average of 15.9%.

Commute Distance and Time:
Like the rest of the Bay Area, Solano county residents' commutes increased in both distance and time. In 1996, Solano county commuters had the longest commutes of all Bay Area counties. In the 1998 survey, their commutes increased again to an average of 27.3 miles. While their commute time and distance increased roughly synchronously, distance increased slightly more proportionally. As shown in the miles per hour row of table Sol-4, Solano county commuters are getting faster.

Table Sol-4

Commute Distance and Time

	1993	*1994*	*1995*	*1996*	*1998*
Average Minutes	31.4	32.9	32.2	31.6	36.4
One-way Miles	22.0	21.5	22.1	23.1	27.3
Miles per Hour	41.96	39.22	41.10	43.80	45.11

Table Sol-5
One-way Commute Distance and Mode

	% of Respondents	*Drive Alone*	*Carpool*	*Transit*	*Other*
0-5 Miles	17.0%	75.0%	17.6%	2.9%	4.4%
6-10 Miles	12.0%	81.3%	12.5%	6.3%	0.0%
11-20 Miles	21.5%	84.9%	15.1%	0.0%	0.0%
21-40 Miles	27.8%	76.6%	16.2%	5.4%	1.8%
41 Miles or more	21.7%	66.7%	27.6%	4.6%	1.1%

Solano county commuters who travel more than 41 miles each way have the lowest drive alone rate. This group also has the highest incidence of carpooling. The highest rate of driving alone occurred in the 11-20 mile commute range. None of these people rode transit or used any of the "other" modes.

Carpool Lane Use:
At 31.8%, fewer Solano county commuters have a carpool lane on their commute than the regional average. This is not surprising because, other than on the bridges, Solano County doesn't have any carpool lanes. These 31.8% either cross a bridge or have a carpool lane on part of their commute in some other county. Of the commuters with a carpool lane, nearly all (96.1%) were familiar with its rules, and 44.1% use it. However, 22.0% of people who have a carpool lane on their commute carpool, only slightly more than all Solano County respondents. Seventy-one percent of commuters with a carpool lane think that it would save them time if they used it, while most commuters (85.7%) who use the carpool lane say that it saves them time. Commuters who use the carpool lane say that it saves them an average of almost 20 minutes. This average is a bit more than the region, which may be influenced by the fact that Solano County residents have to leave the county, thus have longer commutes, in order pass a carpool lane.

Determinants of Mode Choice:
When asked what their reasons are for using their current mode, Solano county commuters primarily reported that it was their only option (table Sol-6). This is unlike the regional average, where most commuters chose their mode for convenience and flexibility. Convenience and flexibility and work hours / work schedule are the next most common reasons people named.

Carpoolers have slightly different reasons for using their mode. Most reported carpooling because of commuting costs; other reasons they frequently mentioned were convenience and flexibility, having no other option, and travel time to work. Carpooler's reasons were consistent with the regional averages. Solano county commuter's 1998 reasons were consistent with its 1996 survey results.

Table Sol-6

Mode Choice Factors

Reason for Mode Choice	*All Modes*	*Drive Alone*	*Carpool*	*Transit*	*Other*
No other way to get to work	25.1%	28.7%	13.8%	14.3%	25.0%
Convenience and Flexibility	14.3%	14.2%	14.7%	19.0%	0.0%
Work hours / work schedule	11.3%	13.1%	6.9%	0.0%	12.5%
Travel time to work	9.8%	9.6%	10.3%	4.8%	25.0%
Need vehicle during work	6.8%	7.5%	6.0%	0.0%	0.0%
Commute costs	4.9%	0.9%	18.1%	9.5%	12.5%
Need vehicle before / after work	3.3%	4.2%	0.0%	0.0%	12.5%
Comfort / relaxation	3.0%	2.3%	4.3%	9.5%	0.0%
Come and go as I please	2.3%	2.8%	0.9%	0.0%	0.0%
Safety	1.7%	0.5%	6.9%	0.0%	0.0%
Not being dependent on others	1.6%	2.1%	0.0%	0.0%	0.0%
Privacy	1.0%	1.2%	0.9%	0.0%	0.0%
Enjoy talking with someone	0.7%	0.0%	3.4%	0.0%	0.0%
Ability to get home in emergency	0.7%	0.5%	0.9%	0.0%	12.5%
Stress	0.7%	0.0%	0.0%	19.0%	0.0%
Environmental concerns	0.5%	0.0%	2.6%	0.0%	0.0%
Employer incentives	0.2%	0.2%	0.0%	0.0%	0.0%
Other	12.0%	12.4%	9.5%	23.8%	0.0%
n=	*400*	*306*	*73*	*15*	*6*

When commuters were asked what they meant by convenience and flexibility they mostly reported saving time (table Sol-7). Other common explanations were the ability to come and go as they pleased, the ability to change plans easily, and reliability and dependability. Drive-alone commuters had similar responses, but for them the ability to come and go as they pleased led.

Table Sol-7

Convenience and Flexibility

Explanation	*All Modes*	*Drive Alone*	*Carpool*	*Transit*
Fastest way to travel	23.3%	21.7%	25.0%	40.0%
Come and go as I please	22.4%	27.2%	5.0%	0.0%
Easy to change plans, stops, etc.	13.8%	16.3%	5.0%	0.0%
Reliable and dependable	11.2%	10.9%	15.0%	20.0%
Don't have to coordinate	6.0%	6.5%	5.0%	0.0%
Don't have to go out of my way	4.3%	3.3%	10.0%	0.0%
Get home in an emergency	2.6%	3.3%	0.0%	0.0%
Only time to myself	0.9%	1.1%	0.0%	0.0%
Other	15.5%	9.8%	35.0%	40.0%
	n=82	*n=61*	*n=17*	*n=4*

Changing Commute Conditions:
Respondents were asked if their commutes were better, worse, or about the same as they were a year ago. Most said that their commute was about the same. Only slightly more said their commute had gotten worse than better. Compared with the region's respondents, fewer Solano County residents' commutes were worse (37.7% for the region 28.0% for Solano).

- Better 23.8%
- Worse 28.0%
- About the same 46.8%

As shown in Table Sol-8, the main that reason commutes have gotten worse is heavier traffic. Heavier traffic, construction delays, and road maintenance account for almost three-quarters of worsening conditions. The reasons commuters gave for their improved commute were roadway improvements, lighter traffic, and having a different commute.

Table Sol-8

How Commute Has Gotten Better of Worse'

Better		*Worse*	
Traffic Lighter	21.3%	Traffic Heavier	46.4%
Roadway Improvements	25.0%	Construction Delays	15.7%
Changed Mode	4.6%	Changed Mode	1.2%
Different Commute	14.8%	Different Commute	6.6%
Travel at Different Time	9.3%	Travel at Different Time	0.6%
Less Road Maintenance Work	4.6%	More Road Work	10.2%
Weather Improved	0.0%	Weather Worse	9.6%
Other	19.4%	Other	9.6%
	n=95		*n=112*

One major change that occurred in the past year was the toll increase on the bridges. Most commuters (90.5%) said they did not make a change in their commute because of this increase in cost. Of those who did change 42% were carpooling or using transit more frequently and 34% were traveling a different route.

Solano County commuters were asked if they used the electronic toll collection system (FasTrak) on the Carquinez Bridge. Very few, 6.8%, reported that they did. Most commuters who didn't use the Fastrak system, 58.6%, said that they didn't use the Carquinez Bridge. Of the respondents who use the bridge the most common reason (6.2%) was that they haven't gotten around to it.

Parking and Employer Incentives:
Almost 9 out of 10 (88.3%) of Solano County commuters have free all-day parking at or near their work site. When commuters were asked if their employer encouraged them to ride transit, carpool or bike to work, 37.0% said theirs did. Slightly fewer respondents whose employer encouraged alternative mode use drove alone, 73.6% compared with 78.7%.

Changes in Home and Work Locations:
Solano County commuters have lived at their current location for an average of 7.16 years. They have worked at their current location for an average of 5.67 years. This is about the same as the Bay Area's average. There does not appear to be a correlation between duration of work or home location and mode choice in the Solano County data.

Past Use of Commute Alternatives:
Commuters who drove alone were asked if they had ever carpooled, vanpooled, or rode transit to or from their current job. At 27.9%, slightly less than the regional average said they had. Those who had were asked why they no longer carpooled or rode transit. Most people in Solano County do not carpool because they have irregular hours (table Sol-9). A close second most common reason is that they can not find a partner. The latter point is encouraging; if 8.3% of drive alone commuters would carpool if they had a partner, finding these people partners would result in a significant reduction of SOV trips. People said they didn't use transit because it was not practical, took too much time, was unreliable, or they had irregular hours.

Table Sol-9

Reasons for Not Carpooling or Riding Transit

Reasons for Not Carpooling		**Reasons for Not Using Transit**	
Irregular Hours	32.4%	Not Practical	19.0%
Can't Find Partners	29.6%	Takes Too Much Time	15.2%
Not Practical	12.0%	Transit Unreliable	12.4%
Need Car Before / After Work	7.4%	Irregular Hours	11.4%
Need Car During Work	2.8%	Need Car Before / After Work	7.6%
Takes Too Much Time	2.8%	Need Car During Work	3.8%
Desire Privacy	1.9%	Safety	3.8%
Transport Children	1.9%	Prefer to Drive Alone	3.8%
Prefer to Drive Alone	0.9%	Cost Expensive	1.0%
Safety	0.0%	Transport Children	1.0%
Other	7.4%	Desire Privacy	0.0%
		Other	20.0%

n=86

Future Alternative Use
Solo drivers were asked how possible it would be for them to carpool, ride transit, or bicycle to work at least one or two days per week. As shown in table Sol-10, most reported that it was not at all possible to use the alternative modes. Compared with the region's averages, Solano County commuters find it less possible to ride transit. The number of Solano County commuters who reported that carpooling was very to

somewhat possible is about the same as the region as a whole. A total of 38.2% of drive alone commuters reported that it is very to slightly possible for them to carpool one to two days a week.

Table Sol-10

How Possible Is It to Use Alternative Modes?

	To Carpool	*To Use Transit*	*To Bicycle*
Very Possible	6.6%	4.1%	5.6%
Somewhat Possible	14.3%	7.1%	4.3%
Slightly Possible	17.3%	7.8%	6.2%
Not At All Possible	61.8%	81.1%	83.9%
n=	*301*	*296*	*305*

Another promising result of the survey is commuter's response when asked if they would carpool if it changed their commute by less than 5 minutes. Half of drive-alone commuters reported that they would carpool under those circumstances.

Awareness of Commute Information Services:

Solano Commuter Information (SCI) provides a variety of commute-related services to the population of Solano County. Of the survey respondents, 48.0% had heard of SCI. As Table Sol-11 displays, the consistent increase in awareness of SCI is indisputable. Since 1993, the percentage of respondents who know of SCI has risen nearly 20 percentage points.

Table Sol-11

Have You Heard of Solano Commuter Information?

	1993	*1994*	*1995*	*1996*	*1998*
Aware of SCI	29.5%	34.8%	39.3%	43.3%	48.0%

Respondents who knew of SCI had mostly heard of it through the media (table Sol-12). Other common ways people hear of SCI are freeway signs, friends or coworkers, and employer events. Employer events are a less common way to have heard of SCI in 1998 than the 1996 survey. In 1996, 13.1% heard of SCI through employer events compared with only 7.8% in 1998.

Table Sol-12

How Heard of Solano Commuter Information

Method	*Percent*
Media	32.7%
Freeway Sign	13.2%
Friend or Coworker	10.7%
Employer Event	7.8%
Direct Mail	5.4%
Employer survey	3.4%
Saw Vanpool	2.4%
Transit Agency	2.4%
Community Event	2.0%
School	1.5%
Other	10.2%
Don't know	8.3%
	n=192

When asked if they were aware of a matching service for carpooling, 44.8% said that they were. This is consistent with the regional average but less than Solano County's 1996 result of 52.5%. Respondents were asked if they knew of the carpool number (800) 53-KMUTE. Half (50.5%) said that they had. In 1996, 71.3% knew of (800) 53-KMUTE. Of the people who knew of the carpool number, 14.4% had contacted it, more than twice as many as the regional average had. Commuters were also asked if they knew of the TravInfo number 817-1717 which provides transit and traffic information to in the Bay Area. Significantly fewer respondents (14.0%) had heard of 817-1717 than the carpool number. Of the people who had heard of 817-1717, 21.4% had contacted it.

Table Sol-13

What is Solanolinks?

Not sure / Don't know	33.1%
New bus service	20.3%
All Solano bus services	7.0%
Intercity bus service	30.8%
Other	8.7%

Survey respondents were asked if they had ever heard of Solanolinks: 43% said that they had. Respondents who had heard of Solanolinks were asked to describe what it is: as shown in Table Sol-13, most respondents didn't know what it is. Other common answers were that it is a name for intercity or commuter bus services and a new bus service.

Geographic Distribution of Sample:
The sample was selected based on home location so all respondents live within the county of Solano (table Sol-14). Over three-quarters of respondents live in Vallejo, Vacaville or Fairfield.

Table Sol-14

Home Cities of Solano County Respondents

City	*Number*
Vallejo	120
Vacaville	98
Fairfield	89
Suisun City	41
Benicia	26
Dixon	16
Travis Air Force Base	7
Rio Vista	3
Total	*400*

Of the 400 Solano County residents who were surveyed, 385 reported their work location. As shown in Table Sol-15, the largest portion of Solano County residents work in their own county. However, in 1996 a significantly greater percentage of Solano County residents worked in their own county. About half as many Solano residents work in Contra Costa County as their own. The next most common employment locations for Solano County residents is beyond the Bay Area, primarily in to the north in Sacramento and Davis. This makes sense considering Solano's proximity to the state capitol. As one might expect, the single most common city for Solano County residents to work in outside their home county is San Francisco. Many also work in Alameda County.

Table Sol-15

Work Locations of Solano County Residents

Alameda		Contra Costa		Marin	
Oakland	13	Richmond	19	San Rafael	4
Berkeley	7	Concord	19		
Fremont	4	Pacheco	8		
San Leandro	3	Walnut Creek	6	Napa	
Hayward	2	Pleasant Hill	4	Napa	19
Livermore	2	Danville	3		
Emeryville	2	Pinole	3		
Pleasanton	2	Crockett	2	San Francisco	
Alameda	1	Lafayette	2	San Francisco	31
Union City	1	Bethel Island	2		
Total	*37*	San Ramon	2		
		Antioch	2	San Mateo	
		Orinda	1	So. San Francisco	3
		El Cerrito	1	Menlo Park	1
		Rodeo	1	Daly City	1
		Total	*75*	*Total*	*5*
Solano		Santa Clara		Beyond the Bay	
Fairfield	46	Sunnyvale	2	Sacramento	14
Vallejo	41	Los Altos	1	Davis	13
Vacaville	27	*Total*	*3*	Rancho Cordova	5
Travis Air Force Base	18			Woodland	3
Benicia	16			Roseville	2
Suisin City	10	Sonoma		Galt	1
Dixon	5	Santa Rosa	3	Placerville	1
Rio Vista	1	Sonoma	1	Tracy	1
Winters	1	*Total*	*4*	Upper Lake	1
Total	*165*			Citrus Heights	1
				Total	*42*

Santa Clara County

This section presents data on a sub-sample of Santa Clara County residents.

A random sample of 383 residents from Santa Clara County was surveyed as part of the 1998 Commute Profile survey. The commuting population of the county is approximately 776,000. The sample of 383 has normal sampling error rate of 5 percent associated with it. A 5 percent sampling error means that if the survey were conducted 100 times, one would be confident that 95 times out of 100 the characteristics of the sample would reflect the characteristics of the population within plus or minus 5 percent.

Commute Mode:

Table Scl-1 shows commute modes since 1993. The drive alone rate increased from 73.8% in 1996 to 77.3% in 1998. The increase, however, is fully accounted for by the change in the carpool classification methodology (discussed in the regional report). The methodology used in earlier editions would have yielded a drive alone rate of 73.9% and a carpool rate of 21.7%--the highest yet recorded in Santa Clara County. Even with the change in methodology the carpool rate remained relatively consistent.

Table Scl-1

Primary Commute Mode

Mode	*1993*	*1994*	*1995*	*1996*	*1998*
Drive alone	77.5%	70.3%	70.3%	73.8%	77.3%
Carpool	15.3%	17.3%	21.3%	18.1%	18.3%
Caltrain	1.0%	0.8%	1.0%	0.8%	1.8%
Bus	2.3%	3.5%	3.0%	2.5%	1.3%
Walk	1.8%	2.3%	1.0%	0.8%	0.5%
Light rail	0.3%	2.0%	0.3%	--	0.5%
BART	--	0.5%	--	--	0.3%
Bicycle	1.3%	1.8%	1.8%	1.5%	0.0%
Telecommute	0.3%	0.8%	0.3%	0.3%	0.0%
Motorcycle	0.5%	1.0%	0.3%	0.5%	0.0%
Other	--	--	--	2.0%	0.0%

n=383

Table Scl-2 shows clustered commute modes over time. The transit rate improved; it is close to the level measured in 1995. The "other mode" category dropped significantly. This is most likely due to some anomalies created by the sample. For example, there are commuters who use their bicycle as a primary means of commuting, but none were picked up in the sample. The extremely wet weather may also have influenced bicycle and walking counts.

Table Scl-2

Clustered Modes Over Time

Mode	*1993*	*1994*	*1995*	*1996*	*1998*
Drive alone	78.0%	71.3%	70.5%	74.3%	77.3%
Carpool	15.3%	17.3%	21.3%	18.0%	18.3%
Transit	3.6%	6.8%	4.3%	3.3%	3.9%
Other	3.4%	4.9%	4.0%	4.5%	0.5%

n=383

Commute Distance and Time:
Both commute distance and time increased in 1998 (table Scl-3). Commute mileage is up slightly from 13.8 in 1996 to 14.1 in 1998. This is below the regional average of 17.3 miles. Commute time increased a bit more dramatically—about two and a half minutes. Speed is slower than in 1996 but still somewhat faster than the slowest speed measured in 1994.

Table Scl-3

Average Commute Distance and Time

	1993	*1994*	*1995*	*1996*	*1998*
One-way Distance	13.1	11.9	12.4	13.8	14.1
Average Minutes	22.9	22.9	22.3	23.2	26.5
Miles Per Hour	34.3	31.3	33.3	35.7	32.1

The percentage of commuters traveling short distances (0-10 miles) in 1998 is down; the percentage traveling medium distances (11-40 miles) is up and the percentage traveling very long distances (41+ miles) is down. The overall impact, as noted above, is very little change between 1996 and 1998 in average commute distance.

Table Scl-4

One-way Commute Distance

	1996	*1998*
0 - 5 Miles	29.5%	24.4%
6 - 10 Miles	28.0%	24.4%
11 - 20 Miles	28.0%	32.9%
21 - 40 Miles	9.6%	14.6%
41 Miles or more	4.8%	3.7%
	n=400	*n=377*

Mode Choice Factors:
Convenience and flexibility ranked high among Santa Clara County commuters (table Scl-5). Table Scl-6 (on the next page) provides some clarification as to what respondents meant by convenience and flexibility. Solo drivers felt more strongly than other groups that it was their only option for getting to work. Carpoolers ranked travel time higher than users of other modes¾ most likely because of time saved in carpool lanes. Transit users mentioned comfort and relaxation more frequently than users of other modes.

Table Scl-5
Mode Choice Factors

Reason For Mode Choice	*All Modes*	*Drive Alone*	*Carpool*	*Transit*
Convenience and flexibility	24.1%	24.4%	23.0%	26.1%
No other way to get to work	17.7%	19.3%	13.3%	13.0%
Travel time to work	14.0%	13.3%	18.6%	4.3%
Work hours / work schedule	7.3%	9.0%	1.8%	4.3%
Need vehicle during work	5.8%	6.5%	4.4%	0.0%
Need vehicle before / after work	4.9%	5.8%	2.7%	0.0%
Commuting Costs	3.2%	0.8%	10.6%	4.3%
Come and go as I please	2.6%	3.3%	0.9%	0.0%
Comfort / relaxation	2.4%	1.8%	2.7%	13.0%
Privacy	1.5%	1.8%	0.9%	0.0%
Not being dependent on others	1.3%	1.8%	0.0%	0.0%
Safety	1.1%	0.0%	5.3%	0.0%
Enjoy talking with someone	0.7%	0.3%	1.8%	4.3%
Environmental concerns	0.6%	0.0%	1.8%	4.3%
Ability to get home in emergency	0.6%	0.5%	0.9%	0.0%
Stress	0.4%	0.3%	0.9%	0.0%
Employer incentives	0.2%	0.0%	0.9%	0.0%
"Other"	11.6%	11.1%	9.7%	26.1
n=	*383*	*296*	*70*	*15*

Convenience and flexibility mean the ability to come and go as one pleases and better travel time (table Scl-6). The ability to change plans and not having to coordinate with others were also important aspects of convenience and flexibility for Santa Clara County residents.

Table Scl-6

Convenience and Flexibility

Explanation	*All Modes*	*Drive Alone*	*Carpool*
Come and go as I please	32.4%	36.6%	19.4%
Fastest way to travel	22.2%	20.1%	30.6%
Easy to change plans, stops, etc.	13.6%	13.4%	16.7%
Don't have to coordinate	9.7%	11.2%	5.6%
Reliable and dependable	6.8%	6.7%	2.8%
Don't have to go out of my way	2.8%	2.2%	5.6%
Get home in an emergency	1.1%	1.5%	0.0%
"Other"	10.8%	7.5%	19.4%
n=	*129*	*97*	*26*

Changing Commute Conditions:
Santa Clara County respondents were asked if their current commute is better, worse or about the same as a year ago. Most respondents indicated that their commute conditions were about the same as they were a year ago. Over a third of commuters felt their commute had gotten worse; those who indicated that their commute had gotten better were in the minority.

- Better 17.6%
- Worse 37.3%
- About the same 45.1%

Heavier traffic was the main reason behind commutes getting worse (table Scl-7). Although heavier traffic was the top reason indicated by respondents from the regional sample as well, a higher percentage of Santa Clara respondents (68.6% vs. 58.2%) felt that heavier traffic had impacted their commute. For those who felt their commute had improved, the main reasons cited were a "different commute" and "roadway improvements".

Table Scl-7

How Commute Has Gotten Better or Worse

Better		**Worse**	
Different Commute	21.1%	Traffic Heavier	68.6%
Roadway Improvements	21.1%	Construction Delays	5.9%
Traffic lighter	18.4%	Different Commute	*5.9%*
Travel at Different Time	15.8%	Weather worse	3.6%
Changed Mode	6.6%	More Road Work	2.4%
Weather Improved	0.0%	Travel at Different Time	1.8%
Less Road Maintenance Work	0.0%	Changed Mode	1.2%
Other	17.1%	Other	10.7%
	n=65		*n=138*

Past Use Of Commute Alternatives:
About a third (32.1%) of respondents indicated that they had either carpooled or used transit to get to their current job. The main reasons for no longer carpooling were their own "irregular hours" and "difficulty in finding partners" (table Scl-8). The most common reasons for those who had tried transit but were no longer using it included that it was "simply not practical" and that it "took too long".

Table Scl-8

Reasons for Not Carpooling or Riding Transit

Reasons For Not Carpooling		*Reasons For Not Using Transit*	
Irregular Hours	24.4%	Not practical	26.8%
Can't find partners	20.7%	Takes too much time	26.1%
Not practical	14.8%	Transit Unreliable	8.7%
Need car before / after work	7.4%	Irregular Hours	8.0%
Takes too much time	6.7%	Transport children	5.8%
Transport children	5.9%	Need car during work	5.8%
Need car during work	4.4%	Need car before / after work	3.6%
Prefer to drive alone	4.4%	Too Expensive	0.7%
Desire privacy	0.7%	Don't know	0.7%
Safety	0.7%	Prefer to drive alone	0.7%
Other	9.6%	Other	11.6%
			n=107

Likelihood of Future Commute Alternatives Use:
Over 43% of Santa Clara respondents thought that there was some possibility that they could carpool to work at least on or two days a week. Bicycling appears to be the next most practical option for respondents; transit came in a few percentage points below bicycling as a possible one or two day a week alternative.

Table Scl-9

How Possible Would It Be to Use an Alternative Travel Mode

	To Carpool	*To Use Transit*	***To Bicycle***
Very Possible	10.8%	5.7%	10.8%
Somewhat Possible	10.2%	7.5%	8.7%
Slightly Possible	23.4%	15.0%	10.8%
Not At All Possible	54.7%	69.7%	69.7%
			n=333

Carpool Lane Use:
Over 60% of Santa Clara County commuters indicated that there was a carpool lane along their route to work. This is considerably higher than the region as whole where only 43% of respondents indicated that there was a carpool lane along their route. Of those who indicated that there was a carpool lane along their route to work, almost all (97.4%) were familiar with the lane's operating rules (i.e., number of occupants and hours). Forty percent indicated that they used the lane. Of those who used the lane, over three-quarters (79.6%) said that it saved them time¾an average of fourteen and a half minutes. This estimate has been fairly consistent since 1994 (table Scl-10).

Table Scl-10
Minutes Saved by Using Carpool Lane

	1994	*1995*	*1996*	*1998*
Minutes Saved	13.5	15.8	15.1	14.4

Of those who had an HOV lane along their route, but were unable to use it most (60.7%) thought it would save them time if they were able to use it.

Geographic Distribution of Sample:
San Jose is the dominant home and work location for respondents from Santa Clara County (table Scl-11). The sample was selected based on home location so all respondents live within the county of Santa Clara. A very high percentage (87%) also work within the county.

Table Scl-11
Respondents' Home Cities

Santa Clara County			
San Jose	196	Cupertino	12
Sunnyvale	43	Campbell	9
Mountain View	20	Milpitas	9
Santa Clara	20	Morgan Hill	8
Palo Alto	18	Los Altos	8
Los Gatos	15	Saratoga	4
Gilroy	14	San Martin	1
		Total	377

Respondents' Work Cities

Santa Clara County		**Other Counties**		**Other Counties**	
San Jose	129	San Francisco	8	San Rafael	1
Sunnyvale	42	Fremont	8	San Ramon	1
Santa Clara	39	Menlo Park	7	Elk	1
Palo Alto	33	Redwood City	6	Soquel	1
Mountain View	32	Hayward	2	Martinez	1
Cupertino	17	San Carlos	2	Stockton	1
Milpitas	15	San Mateo	1	Covelo	1
Campbell	9	Burlingame	1	Santa Cruz	1
Los Gatos	8	Berkeley	1	Newark	1
Morgan Hill	5	Pleasanton	1	Varies	1

Gilroy	2	Fairfield	1	*Sub Total*	*48*
Saratoga	1				
Sub Total	*332*			***Total***	***380***

Appendix A

COMMUTE PROFILE 1998 QUESTIONNAIRE

Hello, my name is _____, with [contractor's name], a public opinion research firm. We're talking to people about their commute experiences so commuting in the Bay Area can be improved.

1a. How many persons 18 years or older in your household work 35 hours or more outside the home?

1. one 47.3% (skip to 2)
2. more than one 52.7% (continue)

1b. Of these people, I need to speak with the person who had the most recent birthday. Would that person be you?

1. yes 90.2% (skip to 2)
2. no 9.0%
3. RF/DK 0.8%

1c. May I speak with that person?

1. yes (introduction and skip to 2)
2. no/not available now

1d. What is the person's name: _____

1e. When is a good time to call: _____

2. Do you currently hold more than one job?

1. Yes 11.6% [***IF YES***: Please answer the questions in this survey with respect to your primary job and primary worksite.]
2. No 88.2%

3. How many days do you work each week? mean 5.04

1	2	3	4	5	6	7
0.0%	0.7%	1.4%	6.3%	80.0%	8.4%	3.3%

4a. How do you usually get to work? [select one]

01. Drive alone	71.4%	Skip to 6 after 4b or c
02. Carpool	14.2%	Skip to 5 after 4b or c
03. Vanpool	0.2%	Skip to 5 after 4b or c
04. BART	4.8%	Skip to 7 after 4b or c
05. Bus	4.7%	Skip to 7 after 4b or c
06. Caltrain	0.8%	Skip to 7 after 4b or c
07. Light Rail	0.6%	Skip to 7 after 4b or c
08. Ferry	0.2%	Skip to 7 after 4b or c
09. Bicycle	0.8%	Skip to 7 after 4b or c
10. Motorcycle	0.0%	Skip to 7 after 4b or c
11. Walk or jog	1.6%	Skip to 7 after 4b or c
12. Work at home/telecommute	0.2%	Skip to 7 after 4b or c
13. Other	0.8%	Skip to 7 after 4b or c

4b. Would that be _____ [*response to Q.3*] days a week?

1. yes 94.3% (follow skip code for normal mode in **4a**)
2. no 5.5%

4c. How else do you get to work? [select up to 3 most frequently used]

01. Drive alone	37.6%	(follow skip code for normal)
02. Carpool	16.1%	(" " " ")
04. BART	5.4%	(" " " ")
05. Bus	7.6%	(" " " ")
06. Caltrain	2.2%	(" " " ")
07. Light Rail	1.1%	(" " " ")
08. Ferry	0.0%	(" " " ")
09. Bicycle	7.5%	(" " " ")
10. Motorcycle	1.1%	(" " " ")
11. Walk or jog	2.2%	(" " " ")
12. Work at home/telecommute	11.8%	(" " " ")
13. Other	8.6%	(" " " ")

5a. Including yourself and the driver, what is the total number of persons usually in the vehicle?

_ mean = 2.55

5b. With whom do you regularly carpool/vanpool? [select all that apply]

1. Household members	34.8%	(skip to 7)
2. Non-household relatives	4.5%	(skip to 7)
3. Co-workers	37.1%	(skip to 7)
4. Friends, acquaintances, neighbors	14.6%	(skip to 7)
5. Someone from a matchlist	1.1%	(skip to 7)
6. Other	7.9%	(skip to 7)
9. RF/DK	0.0%	(skip to 7)

[questions for primary mode = drive alone]

6a. When you say you drive alone, do you mean that you never have children or other household members with you? [select all that apply]

	(ask 6b if one or more yes)	(skip to 7 if all no) 78.3%
Children	Yes sometimes 13.9%	No never (go to 7)
Household members	Yes sometimes 3.9%	No never (go to 7)
Other	Yes sometimes 3.8%	No never (go to 7)

6b. How often do you have other people in the vehicle with you? [select one]

1. Once a week - five times per week	62.6%
2. One to three times per month	13.8%
3. Less than once a month	3.4%
4. Rarely, almost never	17.8%
9. RF/DK	2.5%

[questions for all respondents]

7a. How long have you been [*using the method of transportation you use*] **to get to work?** mean 11.4 years

7b. Months or years [select one]

1. months 12.9%
2. years 87.1%

8a. What are your reasons for _____[*using the method of transportation you use?]*

[select a maximum of 5]

01.	Commuting costs	6.0%	(skip to 9)
02.	Comfort / relaxation	3.4%	(skip to 9)
03.	Travel time to work	11.8%	(skip to 9)
04.	Privacy	0.8%	(skip to 9)
05.	Having vehicle during work	6.9%	(skip to 9)
06.	Having vehicle before / after work	3.1%	(skip to 9)
07.	Safety	1.1%	(skip to 9)
08.	Having no other way to get to work	17.8%	(skip to 9)
09.	Work hours / work schedule	7.2%	(skip to 9)
10.	Not being dependent on others	1.7%	(skip to 9)
11.	Want to get home in an emergency)	0.8%	(skip to 9)
12.	Like to come and go as I please	2.2%	(skip to 9)
13	Environment (reduce pollution / save energy)	1.2%	(skip to 9)
14.	Stress	1.1%	(skip to 9)
15.	Incentives offered by employer	0.2%	(skip to 9)
16.	Enjoy talking to someone / company	0.6%	(skip to 9)
17	Convenience and flexibility	21.6%	**[ask 8b]**
18.	Other	12.2%	(skip to 9)
99	RF / DK	0.3%	(skip to 9)

8b. What do you mean by <u>convenience and flexibility</u>? [select a maximum of 5]

01.	Don't have to plan or coordinate with others	9.1%
02	Can come and go as I please	24.5%
03.	Allows me to change plans, add stops etc. as I please	12.1%
04.	Reliable and dependable	10.3
05.	Can get home in the event of an emergency	1.9%
06.	Only time of the day to be alone	0.2%
07.	Don't have to go to another location	3.5%
08.	Fastest way to travel	23.2%
09.	Other	14.6
99.	RF / DK	0.6%

9a. Is your commute better, about the same or worse now than it was a year ago? [select one]

1. better 15.1%
2. worse 36.5% (skip to 9c)
3. about the same 45.2% (skip to 10)
9. RF / DK 3.3% (skip to 10)

9b . How has it gotten better? [select a maximum of 5]

01. traffic lighter	17.6%	(skip to 10)
02. roadway improvements	16.2%	(skip to 10)
03. changed mode	8.3%	(skip to 10)
04. moved home/changed job/route	27.5%	(skip to 10)
05. commuting at different time	7.4%	(skip to 10)
06. less road maintenance work	0.5%	(skip to 10)
07. weather improved	0.5%	(skip to 10)
08. other	21.1%	(skip to 10)
99. RF/DK	0.0%	(skip to 10)

9c. How has it gotten worse? [select a maximum of 5]

01. traffic heavier	58.2%
02. construction delays	10.7%
03. changed mode	1.9%
04. moved home/changed job/changed route	3.9%
05. commuting at different time	1.7%
06. more road maintenance	5.0%
07. weather worse	5.9%
08. other	12.1%

10a. Have you changed your commute mode as a result of the January 1 bridge toll increase?

1. Yes	2.5%
2. No (skip to 11 or 12)	97.5%

10b. What change have you made? [select one]

1. I carpool, vanpool or use transit sometimes.	13.3%
2. I carpool, vanpool or use transit regularly.	10.0%
3. I work from home more often.	6.7%
4. I travel a different route	36.7%
5. Other	33.3%

[Q. 11a and b Solano County interviews only]

11a. Are you currently using the electronic toll collection system (FasTrak) on the Carquinez Bridge?

1. Yes (skip to 12)	6.8%
2. No	93.0%
3. RF/DK	0.3%

11b. Why not? [select one]

1. Don't know how to get enrolled	7.1%
2. Just haven't gotten around to it	14.9%
3. Too expensive	6.5%
4. Unclear how it works	8.4%
5. Other	54.5%
6. RF/DK	8.4%)

12. About how many miles do you travel to work one-way? mean=17.3 miles

13. How many minutes does your commute <u>to work</u> take door to door? mean = 31.7 minutes

14a. Is there a special carpool lane, that can be used only by carpools, vanpools and buses along your route to work?

1. Yes	42.8%	
2. No	55.2%	(skip to 15)
9. RF/DK	2.1%	(skip to 15)

14b. Are you familiar with the carpool lane's operating rules (i.e., number of occupants and hours)**?**

1. Yes	96.1%
2. No	3.9%
9. RF/DK	0.0%

14c. Do you use the carpool lane?

1. Yes	37.6%	
2. No	62.4%	(skip to 14f)
9. RF/DK	0.0%	(skip to 15)

14d. Does the commuter lane save you time in getting to work?

1. Yes	73.6%	
2. No	22.8%	(skip to 15)
9. RF/DK	3.6%	(skip to 15)

14e. How many minutes? mean = 15.8% minutes (skip to 15)

14f. Do you think that you would save time, if you were able to use the carpool lane?

1. Yes	65.3
2. No	30.0%
9. RF/DK	4.7%

15. What city do you live in? _____see Appendix C_____

16. What is the zip code there? _____see Appendix C_____

17.

17a. How long ago did you last change your residence? mean = 7.5 years

17b. Months or years [select one]

1. months	17.3%
2. years	82.7%

18 What city do you work in? _____see Appendix C_____

19 What is the zip code there? _____see Appendix C_____

20a. How long ago did you last change your work location? mean = 5.6 years

20b. Months or years [select one]

1.	months	26.6%
2.	years	73.4%

21. Is there free all-day parking at or near your worksite?

1.	Yes	79.1%
2.	No	19.9%
9.	RF/DK	1.1%

22. Does your employer encourage employees to use transit, carpool, or bicycle to get to work?

1.	Yes	36.2%
2.	No	58.1%
9.	RF/DK	5.7%

23a. As part of your employment, do you have the opportunity to work at home instead of going to your regular place of work?

1.	Yes	15.9%	
2.	No	83.6%	(skip to 24a)
9.	RF/DK	0.5%	(skip to 24a)

23b. Approximately how many <u>days per month</u> do you work at home instead of at your regular place of work? mean = 5.9 days per month

23c. Would you say you make more, fewer, or about the same number of trips with your car on days that you work at home? [select one]

1.	More	4.2%
2.	Fewer	50.3%
3.	Same	28.8%
4.	Don't Know	12.0
5.	Refused	4.7%

[questions for primary mode = drive alone only]

24a. Have you ever carpooled, vanpooled or used transit to get to or from your current job?

1.	Yes	33.4%	
2.	No	66.3%	(skip to 25)
9.	RF/DK	0.2%	(skip to 25)

24b. Why don't you carpool regularly? [select a maximum of 3]

01.	Takes too much time	5.6%
02.	Desire privacy	1.5%
03.	Need vehicle during work	6.1%
04.	Need vehicle before / after work	6.6%
05.	Transport children	4.3%
06.	Safety	0.5%
07.	Not practical	15.5%
08.	Irregular hours / overtime	23.2%
09.	Prefer to drive alone	2.0%
10.	Can't find carpool or vanpool partners	22.6%
11.	Other	11.2%

24c. Why don't you take transit regularly? [select a maximum of 3]

01.	Takes too much time	21.6%
02.	Desire privacy	0.0%
03.	Need vehicle during work	7.8%
04.	Need vehicle before / after work	4.0%
05.	Transport children	3.5%
06.	Safety	1.0%
07.	Not practical	20.6%
08.	Irregular hours / overtime	10.3%
09.	Transit unreliable	10.6%
10.	Prefer to drive alone	1.0%
11.	Cost / too expensive	1.5%
12.	Other	15.6%

25. How possible would it be for you to carpool at least one or two days a week? [select one]

1.	Very possible	9.0%
2.	Somewhat possible	10.7%
3.	Slightly possible	19.4%
4.	Not at all possible	60.5%

26. How possible would it be for you to use transit at least one or two days a week? [select one]

1.	Very possible	5.4%
2.	Somewhat possible	8.2%
3.	Slightly possible	13.8%
4.	Not at all possible	72.7%

27. How possible would it be for you to bicycle all or part of the way to work at least one or two days a week? [select one]

1. Very possible 7.6%
2. Somewhat possible 6.5%
3. Slightly possible 7.2%
4. Not at all possible 78.7%

28. Would you be willing to take a carpool passenger on a full or part-time basis if it changed your trip by less than 5 minutes?

1. Yes 47.1%
2. No 48.4%
9. RF/DK 4.5%

[questions for all respondents]

29. Are you aware of a free service that gives you a list of people with similar commutes for you to carpool with?

1. Yes 44.9%
2. No 55.1%

30a. Have you ever heard of a carpool number such as (800) 755-POOL [for Solano: (800) 53-KMUTE]**?**

1. Yes 57.5%
2. No 42.5% (skip to 31a)

30b. Have you ever contacted (800) 755-POOL [for Solano: (800) 53-KMUTE]**?**

1. Yes 6.6%
2. No 93.4%

31a. Have you ever heard of the transit and traffic number 817-1717?

1. Yes 12.8%
2. No 87.2% (skip to 32a)

31b. Have you ever contacted 817-1717?

1. Yes 30.7%
2. No 69.3%

32a. Have you ever heard of an organization called "RIDES for Bay Area Commuters" [for Solano: "Solano Commuter Information"]**?**

1. Yes 45.3%
2. No 54.7% (skip to 33a)

32b. How did you hear of RIDES for Bay Area Commuters[for Solano: "Solano Commuter Information"]**?** [select a maximum of 3]

01. Employer event	9.9%
02. Community event	1.1%
03. Friend/co-worker	5.4%
04. Freeway sign	12.5%
05. Direct mail	2.0%
06. Employer survey	2.0%
07. Saw vanpool	2.5%
08. Transit agency	1.3%
09. School	0.5%
10. Media	43.7%
11. Other	7.2%
99. RF/DK	11.7%

[Q. 33a and b Solano County interviews only]

33a. Have you ever heard of Solanolinks?

1. yes	43%
2. no (skip to 34)	57%

33a. Can you describe what Solanolinks is? [select one]

1. no, not sure	33.1%
2. New bus service	20.3%
3. Name for all Solano bus services	7.0%
4. Name for intercity or commuter Solano bus services	30.8%
5. Other	8.7%

34a. Do you have a computer in your home?

1. yes	71.8%	
2. no	28.1%	(skip to 35)

34b. Are you aware of transit and carpool information available via the internet?

1. yes	29.0%	(skip to 35)
2. no	69.7%	

35. How old are you? Are you . . .

1. Less than 20	1.1%]
2. 20 to 29	17.3%
3. 30 to 39	30.7%
4. 40 to 49	29.8%
5. 50 to 59	15.8%
6. 60 or older	4.1%

36. What is the last level of school you completed? Is it . . .

1. Grades 1-11	2.5%
2. High School Graduate	12.5%
3. Some College / Vocational School	30.7%
4. College Graduate	32.8%
5. Post-Graduate / Professional School	21.2%

37. With what ethnic group do you identify yourself: Caucasian, African-American, Asian, Hispanic, or of some other ethnic or racial background?

1. Caucasian	60.8%
2. African-American	6.9%
3. Hispanic / Latino	10.0%
4. Asian	12.8%
5. Other	7.3%

38. And what is your combined total annual household income? Is it . . .

1. $20,000 or less	5.2%
2. $21,000 to $35,000	13.8%
3. $36,000 to $50,000	15.7%
4. $51,000 to $65,000	15.8%
5. $66,000 to $80,000	12.7%
6. $81,000 to $100,000	9.7%
7. or more than $100,000	14.9

39. Gender of respondent: [Do not need to ask]

1. Male	54.8%
2. Female	45.3%

Those are all the questions I have for you. Thank you very much for participating.

Appendix B

Demographic Variables and Mode

This appendix compares information on age, household income, ethnicity, education and gender with commute mode.

Table B-1

Age and Commute Mode

	Drive alone	***Carpool***	***Transit***	***Other***	***Total***
Younger than 20 *(1.3% of respondents)*	46.2%	23.1%	23.1%	7.7%	100%
20 to 29 *(17.2% of respondents)*	70.0%	12.1%	14.5%	3.4%	100%
30 to 39 *(31.1% of respondents)*	69.6%	18.8%	8.4%	3.3%	100%
40 to 49 *(30.1% of respondents)*	70.9%	16.2%	10.1%	2.8%	100%
50 to 59 *(16.2% of respondents)*	78.8%	8.5%	10.1%	2.6%	100%
60 or older *(4.0% of respondents)*	77.6%	2.0%	16.3%	4.1%	100%
Regional Average	71.4%	14.3%	10.9%	3.3%	100%

n=1,188

Table B-2

Household Income and Commute Mode

	Drive alone	*Carpool*	*Transit*	*Other*	*Total*
Less than $20,000 *(6.2% of respondents)*	64.5%	8.1%	21.0%	6.5%	100%
$21,000 to $35,000 *(15.7% of respondents)*	69.9%	11.4%	15.1%	3.6%	100%
$36,000 to $50,000 *(17.7% of respondents)*	73.4%	11.2%	12.2%	3.2%	100%
$51,000 to $65,000 *(17.5% of respondents)*	70.5%	19.5%	6.3%	3.7%	100%
$66,000 to $80,000 *(14.6% of respondents)*	73.7%	13.2%	9.9%	3.3%	100%
$81,000 to $100,000 *(10.8% of respondents)*	73.3%	13.8%	8.4%	3.4%	100%
More than $100,000 *(17.6% of respondents)*	72.1%	18.4%	8.4%	1.1%	100%
Regional Average	71.4%	14.3%	10.9%	3.3%	100%

n=1,053

Table B-3

Ethnicity and Mode

	Drive alone	*Carpool*	*Transit*	*Other*	*Total*
Caucasian *(61.9% of respondents)*	73.6%	14.1%	8.5%	3.8%	100%
African-American *(7.1% of respondents)*	67.5%	7.2%	25.3%	0.0%	100%
Hispanic/Latino *(10.2% of respondents)*	71.7%	19.2%	7.5%	1.7%	100%
Asian *(13.5% of respondents)*	64.3%	16.2%	16.9%	2.6%	100%
Other *(7.3% of respondents)*	69.0%	14.9%	11.5%	4.6%	100%
Regional Average	71.4%	14.3%	10.9%	3.3%	100%

n=1,178

Table B-4

Education and Commute Mode

	Drive alone	*Carpool*	*Transit*	*Other*	*Total*
Grades 1-11 *(2.6% of respondents)*	70.0%	16.7%	13.3%	0.0%	100%
High School Graduate *(12.2% of respondents)*	75.3%	17.3%	5.3%	2.0%	100%
Some College *(30.8% of respondents)*	73.1%	13.6%	11.4%	1.9%	100%
College Graduate *(33.8% of respondents)*	70.1%	12.7%	13.7%	3.6%	100%
Post-Grad/Professional *(20.6% of respondents)*	68.9%	16.1%	9.1%	5.9%	100%
Regional Average	71.4%	14.3%	10.9%	3.3%	100%

n=1,198

Table B-5

Gender and Commute Mode

	Drive alone	*Carpool*	*Transit*	*Other*	*Total*
Male *(54.6% of respondents)*	76.1%	11.6%	9.1%	3.2%	100%
Female *(45.4% of respondents)*	65.7%	17.7%	13.1%	3.5%	100%
Regional Average	71.4%	14.3%	10.9%	3.3%	100%

n=1,200

Appendix C

Geographic Distribution of Regional Sample

This appendix provides detail on the origin and destination of the 1,200 respondents who comprise the regional sample. Data are presented at the county, city and zip code levels. Although sample sizes are too small to examine sub-regional groups, it may be possible in future editions of Commute Profile to aggregate several years of data and develop adequate sample sizes for sub-regional analysis.

Table C-1 shows the origin and destination of respondents by county and provides a comparison with the percentage of employed residents in each of those counties. Data on "employed residents" is from the 1990 Census. "Employed residents" are defined here as individuals living in a particular county who work away from their home (i.e., individuals who commute to work). The sampling procedures for Commute Profile 98 were based on the distribution of employed residents in the region. Consequently the sample distribution (based on origin) closely matches the actual distribution of employed residents.

Table C-1

County of Destination and Origin

County	Destination		Origin		Employed Residents
Alameda	209	17.7%	248	20.7%	20.4%
Contra Costa	120	10.1%	155	12.9%	13.0%
Marin	41	3.5%	46	3.8%	3.9%
Napa	15	1.3%	20	1.7%	1.7%
San Francisco	234	19.8%	146	12.2%	12.4%
San Mateo	103	8.7%	134	11.2%	11.3%
Santa Clara	353	29.8%	315	26.2%	26.1%
Solano	32	2.7%	63	5.3%	5.2%
Sonoma	50	4.2%	73	6.1%	6.1%
Other	27	2.3%	0	0%	na
Total	1,184	98.7% [8]	1,200	100%	100%

[8] This column does not sum to 100% because of missing data for 16 cases.

Table C-2 provides a county to county trip table for the regional sample. For example, the first column shows that 144 or 12% of the respondents live and work in Alameda County; 30 or 3% of respondents live in Contra Costa County and work in Alameda County. Santa Clara has a high percentage of respondents who both live and work within the county. San Francisco imports more workers from surrounding counties than from within the county. Not shown in table C-2 are workers whose destination is beyond the nine Bay Area counties or whose work destination varies; 43 respondents fit in these categories.

Table C-2

County to County Trip Table

	← Destination →								
County	ALA	CCA	MRN	NAP	SF	SMO	SCL	SOL	SON
ALA	144 12%	17 1%	2 --	0 --	34 3%	8 1%	35 3%	0 --	0 --
CCA	30 3%	76 6%	1 --	1 --	26 2%	6 1%	4 --	3 --	0 --
MRN	3 --	1 --	21 2%	0 --	14 1%	3 --	1 --	0 --	2 --
NAP	0 --	2 --	2 --	8 --	1 --	0 --	1 --	2 --	0 --
SF	13 1%	3 --	1 --	0 --	105 9%	16 1%	7 1%	0 --	0 --
SMO	3 --	3 --	1 --	0 --	37 3%	54 5%	31 3%	0 --	0 --
SCL	9 1%	2 --	1 --	0 --	5 --	16 1%	274 23%	0 --	0 --
SOL	3 --	15 1%	2 --	5 --	6 1%	0 --	0 --	25 2%	1 --
SON	4 --	1 --	10 1%	1 --	6 1%	0 --	0 --	2 --	47 4%

(-- = less than 1%)

Table C-3, on the following two pages, lists the home and work cities of respondents within each county. San Jose is the most common home city with 160 respondents. San Francisco was not far behind with 146 respondents. The largest number of respondents (234) work in San Francisco; San Jose was a distant second with 128 respondents.

The final table in this appendix (table C-4) presents the data collected on origin and destination zip codes. This is the smallest scale geographic data collected in this study. Some respondents did not know their zip codes—especially work-end zip codes. For those respondents, a zip code was assigned based on the city where they worked or lived. On the work-end, 341 zip codes were assigned and on the home-end 11 zip codes were assigned.

Table C-3
Respondents' Home Cities

Alameda	
Oakland	64
Fremont	39
Hayward	30
Berkeley	24
San Leandro	16
Livermore	16
Pleasanton	14
Union City	10
Alameda	8
Dublin	6
San Lorenzo	6
Newark	5
Emeryville	5
Sunol	1
Piedmont	1
Missing	2
Total	*248*

Contra Costa	
Richmond	25
Concord	15
Walnut Creek	13
Danville	13
Antioch	12
Pittsburg	12
Pacheco	10
Alamo	7
El Cerrito	6
Lafayette	6
Oakley	6
Brentwood	6
Pleasant Hill	5
San Ramon	4
Moraga	4
Orinda	2
Rodeo	2
Pinole	2
Crockett	1
Byron	1
Port Costa	1
Clayton	1
Missing	1
Total	*155*

Marin	
San Rafael	12
Novato	10
Mill Valley	6
San Anselmo	5
Corte Madera	3
Larkspur	2
Fairfax	2
Inverness	2
San Geronimo	1
Point Reyes Station	1
Woodacre	1
Belevedere	1
Total	*46*

Napa	
Napa	18
Angwin	1
Calistoga	1
Total	*20*

San Francisco	
San Francisco	146

San Mateo	
San Mateo	29
Redwood City	27
Pacifica	11
Daly City	10
San Bruno	8
South S.F.	7
Burlingame	7
Colma	7
Half Moon Bay	6
Belmont	5
Menlo Park	5
Montara	3
Moss Beach	3
San Carlos	1
Brisbane	1
El Granada	1
La Honda	1
Milbrae	1
Missing	1
Total	*134*

Santa Clara	
San Jose	160
Sunnyvale	32
Santa Clara	20
Palo Alto	19
Mountain View	17
Cupertino	12
Gilroy	12
Los Gatos	8
Campbell	8
Los Altos	7
Milpitas	7
Morgan Hill	6
Saratoga	3
San Martin	1
Missing	3
Total	*315*

Solano	
Vallejo	20
Fairfield	14
Vacaville	12
Suisun	7
Benicia	5
Dixon	2
Travis Air Base	1
Missing	1
Total	62

Sonoma	
Santa Rosa	22
Petaluma	12
Windsor	12
Sonoma	6
Healdsberg	5
Rhonert Park	4
Cloverdale	3
Penngrove	2

				Freestone	2
				Kenwood	1
				Cotati	1
				Missing	*3*
				Total	*73*

Table C-3 (continued)
Respondents' Work City

Alameda		**Contra Costa**		**Marin**	
Oakland	57	Richmond	23	San Rafael	23
Fremont	32	Walnut Creek	23	Novato	7
Berkeley	30	San Ramon	17	Corte Madera	2
Hayward	26	Concord	15	Larkspur	2
San Leandro	15	Antioch	7	Mill Valley	2
Pleasanton	13	Pleasant Hill	7	Lagunitas	1
Livermore	10	Pacheco	7	Point Reyes Station	1
Alameda	8	Danville	5	Sausilito	1
Union City	7	Pinole	4	San Geronimo	1
Emeryville	5	Pittsburg	3	San Quinten	1
San Lorenzo	3	Brentwood	2	**Total**	41
Newark	3	Lafayette	2		
Total	209	Rodeo	2	*Napa*	
		Alamo	1	Napa	13
		Moraga	1	Angwin	1
		Orinda	1	Calistoga	1
		Total	120	*Total*	*15*
				San Francisco	
				San Francisco	234

San Mateo		**Santa Clara**		**Solano**	
San Mateo	19	San Jose	128	Fairfield	10
Redwood City	17	Palo Alto	49	Vacaville	6
Menlo Park	16	Santa Clara	47	Vallejo	6
South S.F.	14	Sunnyvale	42	Suisun	3
Burlingame	10	Mountain View	35	Travis Air Base	3
San Carlos	5	Cupertino	13	Benicia	2
Colma	3	Milpitas	13	Dixon	1
Daly City	3	Campbell	12	***Total***	31
Half Moon Bay	3	Los Gatos	7		
Milbrae	3	Morgan Hill	4		
Pacifica	3	Gilroy	1	Sonoma	
San Bruno	3	Los Altos	1	Santa Rosa	25
Belmont	1	Saratoga	1	Petaluma	6

El Granada	1	*Total*	353	Rhonert Park	6
La Honda	1			Sonoma	6
Princeton	1	***Beyond the Bay***		Healdsberg	3
Total	103	Sacramento	3	Cloverdale	1
		Stockton	3	Freestone	1
Varies		Davis	2	Geyserville	1
Varies	13	Misc.	*7*	Kenwood	1
		Total	31		50
				Total	

Table C-4

Respondents' Home Zip Codes

94536= 23	94611= 17	94550= 16	95123= 15	94086= 15
94533= 14	94558= 14	95051= 14	94087= 14	94121= 13
95124= 13	94402= 12	94118= 12	95127= 12	95014= 12
94112= 12	94565= 12	94043= 11	94509= 11	94044= 11
95492= 10	94553= 10	95148= 10	95136= 10	95020= 10
95687= 10	94015= 10	94110= 10	94587= 10	94596= 10
94544= 10	94114= 10	94590= 9	94109= 9	94115= 9
94122= 9	94117= 9	95112= 9	94062= 9	95132= 8
94061= 8	95008= 8	95125= 8	94066= 8	94566= 8
94123= 8	94131= 8	94610= 8	94116= 8	94806= 8
94010= 7	94063= 7	94706= 7	94080= 7	94306= 7
94952= 7	94585= 7	95035= 7	94014= 7	94803= 7
94589= 7	94507= 7	94401= 7	94526= 7	94609= 7
94303= 7	94577= 7	94703= 6	94804= 6	94538= 6
94549= 6	94903= 6	94560= 6	95128= 6	94506= 6
94530= 6	95037= 6	94601= 6	95121= 6	94546= 6
95131= 6	95135= 6	94588= 6	94580= 6	94941= 6
95118= 6	94539= 6	94019= 6	94513= 6	94561= 6
94552= 5	94608= 5	94960= 5	94578= 5	94301= 5
94002= 5	94568= 5	95404= 5	94403= 5	94502= 5
94591= 5	94523= 5	95448= 5	95129= 5	94510= 5
94022= 5	95116= 5	94901= 5	95130= 5	95476= 5
95403= 5	94602= 5	94404= 4	94134= 4	94520= 4
95401= 4	94621= 4	94928= 4	95133= 4	94025= 4
94559= 4	95030= 4	95120= 4	94521= 4	94556= 4
94132= 4	94619= 4	95050= 4	94579= 4	94801= 4
95032= 4	94954= 4	95126= 4	95117= 4	94541= 4
94949= 4	94518= 4	94618= 4	94583= 4	94708= 3
94555= 3	94037= 3	95409= 3	94102= 3	95425= 3
94038= 3	94133= 3	94501= 3	94041= 3	94103= 3
95119= 3	94925= 3	94563= 3	94945= 3	94947= 3
95070= 3	94040= 3	94124= 3	94598= 3	95407= 3
94101= 3	94519= 3	94605= 3	94545= 3	94107= 3
94065= 2	94930= 2	94705= 2	94951= 2	95620= 2
94024= 2	94937= 2	95111= 2	95033= 2	95122= 2
94547= 2	95490= 2	94606= 2	95688= 2	94607= 2
94089= 2	94939= 2	95472= 2	94704= 2	94515= 1
95418= 1	94963= 1	95054= 1	94614= 1	94005= 1
95140= 1	94709= 1	94973= 1	95405= 1	94586= 1
93420= 1	91535= 1	94710= 1	94017= 1	94127= 1
95021= 1	94595= 1	94508= 1	94956= 1	94070= 1
94576= 1	94504= 1	94707= 1	94603= 1	94702= 1
95815= 1	94931= 1	95495= 1	94525= 1	94020= 1
94540= 1	99421= 1	94920= 1	95454= 1	94514= 1

94120= 1	94028= 1	94542= 1	94085= 1	94569= 1
94030= 1	94517= 1	95046= 1	95086= 1	94686= 1
94018= 1	94535= 1	95052= 1	94531= 1	95611= 1
94907= 1	94400= 1	95201= 1	94564= 1	95153= 1
95452= 1	95138= 1	95406= 1	94592= 1	

n=1,195

Table C-4 (continued)

Respondents' Work Zip Codes

94101= 58	95101= 32	94105= 28	95050= 21	94103= 21
94583= 17	94111= 17	94540= 16	94612= 16	94043= 15
94601= 15	95112= 15	94577= 15	94035= 15	94085= 14
94086= 14	94901= 14	94104= 14	94025= 14	94596= 14
94538= 13	Varies= 13	95054= 13	95035= 13	94801= 13
94080= 13	95131= 13	95008= 12	94536= 12	94102= 12
95014= 12	94300= 11	94301= 11	94304= 11	94566= 11
94010= 10	94124= 10	94305= 10	94533= 10	94063= 10
94550= 10	95401= 9	94107= 9	95403= 8	94089= 8
94518= 7	94559= 7	94509= 7	95134= 7	94523= 7
94903= 7	94587= 7	94553= 7	94061= 7	95052= 6
94110= 6	94545= 6	94133= 6	94609= 6	94607= 6
95127= 6	94806= 6	94558= 6	94701= 6	94109= 6
95476= 6	94400= 6	94928= 5	94608= 5	94070= 5
95051= 5	95124= 5	94118= 5	94123= 5	94404= 5
94143= 5	94564= 4	94720= 4	95030= 4	95688= 4
94088= 4	94108= 4	95125= 4	94593= 4	94303= 4
94598= 4	94704= 4	94501= 4	94040= 4	94952= 4
94539= 4	95404= 4	95113= 4	94115= 4	95037= 4
95110= 4	94502= 4	94132= 4	94621= 3	94535= 3
94565= 3	94544= 3	94710= 3	95448= 3	94014= 3
94580= 3	94128= 3	94555= 3	95121= 3	94804= 3
94403= 3	94526= 3	94116= 3	94015= 3	94066= 3
95032= 3	94611= 3	94585= 3	95128= 3	95129= 3
94945= 3	94520= 3	94044= 3	94707= 3	94560= 3
94019= 3	94519= 3	94590= 3	94947= 2	94513= 2
94120= 2	94709= 2	94114= 2	94949= 2	95119= 2
94030= 2	94524= 2	95407= 2	94702= 2	95616= 2
94941= 2	94549= 2	94706= 2	94510= 2	95116= 2
94606= 2	95133= 2	94117= 2	94925= 2	95190= 2
94904= 2	94401= 2	94705= 2	94939= 2	94589= 2
94703= 2	95687= 2	95132= 2	94506= 2	94547= 2
95135= 2	95123= 2	95161= 1	94507= 1	94568= 1
95209= 1	94444= 1	94302= 1	94142= 1	94576= 1
95101= 1	95138= 1	95970= 1	94504= 1	94026= 1
94618= 1	94122= 1	94956= 1	95630= 1	95350= 1
95425= 1	94112= 1	95188= 1	94113= 1	94002= 1
94018= 1	94556= 1	94087= 1	94022= 1	94515= 1
95126= 1	95204= 1	94013= 1	95472= 1	94998= 1
95236= 1	94028= 1	94306= 1	95073= 1	45934= 1
94964= 1	95405= 1	95033= 1	95103= 1	95452= 1
95070= 1	94605= 1	94802= 1	95114= 1	95136= 1
94963= 1	94106= 1	94926= 1	94610= 1	94563= 1
94938= 1	95841= 1	95053= 1	95490= 1	94588= 1
94130= 1	95122= 1	94619= 1	94188= 1	94020= 1
95022= 1	97140= 1	94546= 1	95193= 1	95441= 1
95034= 1	95691= 1	95620= 1	95491= 1	95120= 1
94402= 1	95015= 1	94591= 1	94207= 1	94603= 1
94604= 1	94965= 1	94410= 1	94092= 1	94027= 1
94041= 1	95155= 1	95151= 1	95020= 1	95111= 1
95205= 1	95428= 1	95060= 1	95913= 1	95148= 1

n=1,188